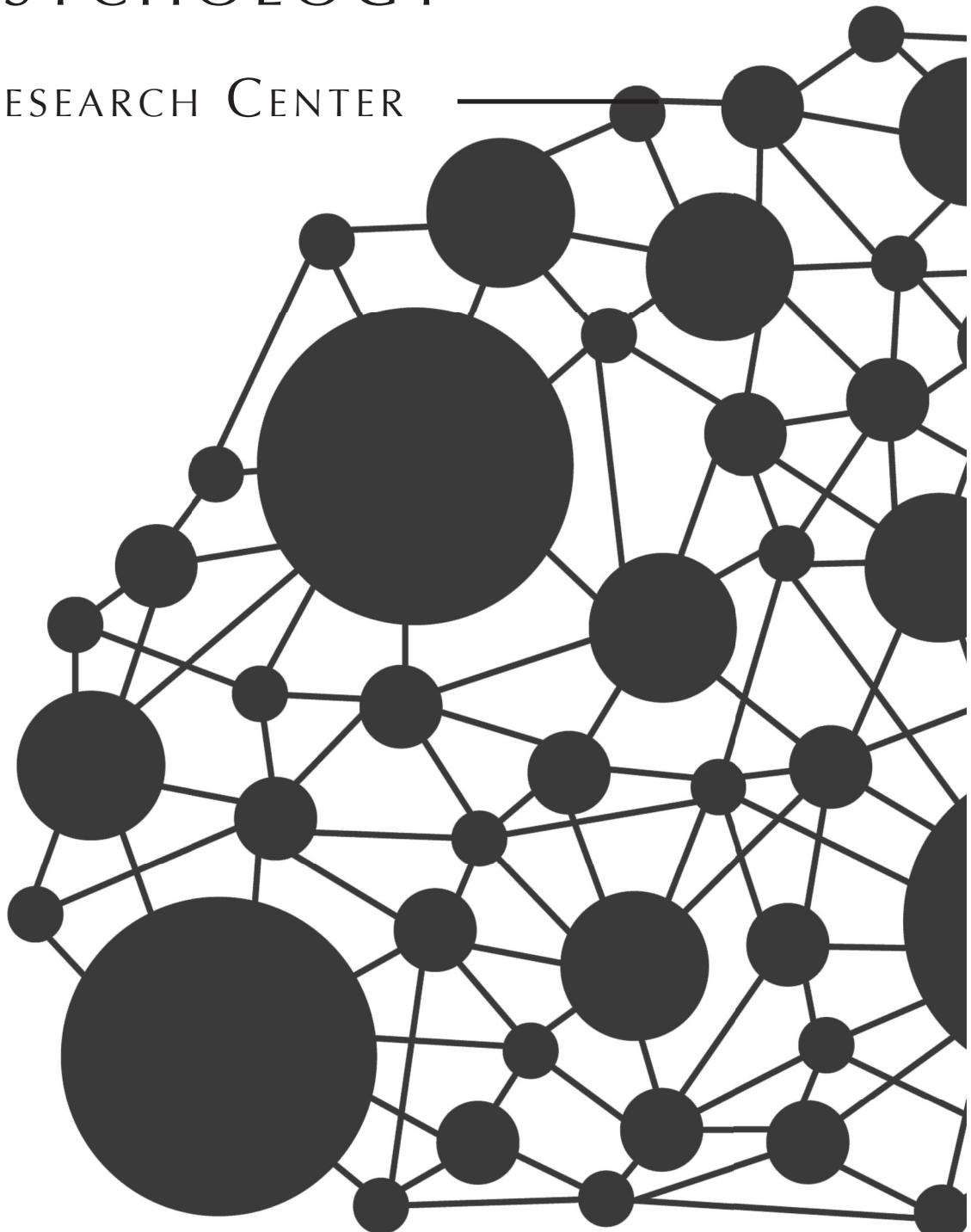


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We thank the following for their translations of the abstracts: *Eberhard Bauer* (German), *Etzel Cardeña* (Spanish), and *Renaud Evrard* (French)

Journal of Parapsychology, 81(2), 104-105

Editorial: On Scientific Amnesia

Etzel Cardeña

Those who cannot remember the past are condemned to repeat it.
George Santayana (1905)

In coincidence -or synchrony, if you will- with Chris Roe's focus in his Parapsychological Association (PA) Presidential Address (this issue) on the extraordinary contributions of Charles (Chuck) Honorton, I am reprinting in the PA's bulletin *Mindfield* one of his great papers on the relation between alterations of consciousness and experimental psi (Honorton, 1976). Chuck's justified demolition of dishonest criticism notwithstanding, any discipline or system requires self-criticism to avoid dogmatisms and potential catastrophes, and parapsychology is not an exception (Cardeña, 2011). This completely unoriginal reflection came to my mind while I was attending the latest PA convention in Athens. As is the case with just about every other convention I have attended, and I have gone to meetings of at least three major disciplines and various subdisciplines, the quality of the papers followed a more-or-less normal distribution, with a few very good ones, the majority showing competence, and some that were quite bad. I have been around enough to have heard or read many times the cliché that a whole conference program was "outstanding", when that is rarely, if ever, the case.

In the Athens convention what was particularly problematic to me was the ignorance or disregard by some presenters of earlier and very pertinent research and literature, as if somehow the topic had not been studied until the authors decided to focus their attention on it. Partly, I believe, this evidences an inadequate literature review and a failure to do one's homework, but also arrogance in the assumption that what was done previously is not worth reading, as if somehow we are now more knowledgeable and/or brighter than people in the past (reading any paper by Chuck Honorton or some of the other great figures in the field should quickly disabuse any reader of that false belief). As one of my editorship policies, I demand that papers contain adequate literature reviews of relevant works, no matter how old. Of course, the goal of a complete literature review can only be aspirational, as I always find to my dismay after publishing a paper after conducting a literature search that I had missed one or more papers that gave me precious information and insight.

I can contrast sloppy, willful "amnesia" with an extraordinary presentation I heard on the very sophisticated and flexible cognition of bees (Perry, Barron, & Chittka, 2017). Besides the ingenuity of the researchers, it was obvious that they had engaged in a decades-long programmatic set of studies, which clearly built on previous work and responded to it. It is unmistakable that those authors have greatly advanced our understanding of the topic. In contrast, besides the work of the Rhines and collaborators, Chuck Honorton, and a few others, there are few examples in parapsychology of a similar steadfast pursuit. Although I do not agree with Richard Wiseman's interpretation (2009) that the frequent "jumping ship" by psi researchers to other topics or research paradigms is based on the inexistence of psi, I agree with his remark that parapsychologists (and their graduate students) do not maintain often enough their focus on further developing a question or issue as much as they should, and as much as successful scientists even in other originally marginal areas such as hypnosis have done (Cardeña, 2010). When the preeminent philosopher

Jorge (anglicized as “George”) Santayana wrote the oft-quoted sentence above about the need to remember the past he was not referring to parapsychology, but he might have.

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Erratum

Hideyuki Kokubo sends these corrections to his paper in the previous issue, (Kokubo, Nemoto, & Kawano, 2017, p. 83):

(legends of the middle 2 graphs in Figure 2)

[Error]

$p < .0002$ $p < .1313$
 $(N = 18)$ $(N = 20)$

[Correction]

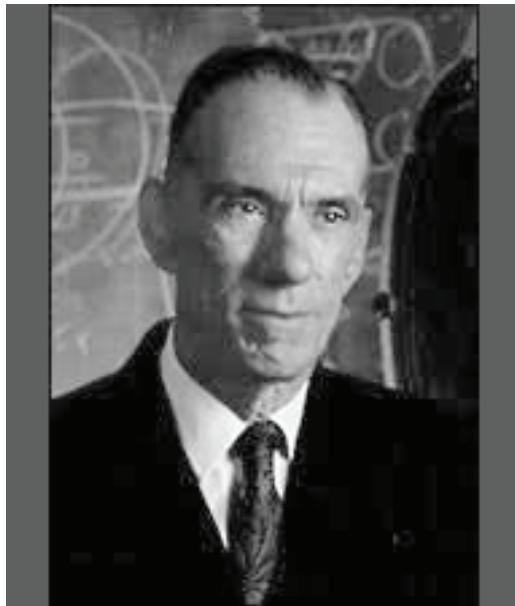
$p < .1313$ $p < .0002$
 $(n = 20)$ $(n = 18)$

Kokubo, H., Nemoto, Y., & Kawano, K. (2017). Discussion on methodology of water crystal formation as a detection system for psi. *Journal of Parapsychology*, 81, 73-86.

Journal of Parapsychology, 81(2), 106-108

In Memoriam: Robert G. Jahn, Scientist, Mentor, Friend¹

Roger Nelson



We have lost a major figure in consciousness research with the passing of Professor Robert G. Jahn, the founder and director of the Princeton Engineering Anomalies Research laboratory (PEAR). PEAR was Bob's longest running research program and capped a career that touched and influenced the farthest reaches of science, from the physics of electric propulsion for spacecraft to the extended capacities of human consciousness. Bob was born April 1 1930, and died Nov 15 2017 at his home in Princeton, surrounded by family and loved ones. He had a broadly influential role in psi research, and the PEAR lab became a home for many and a beacon for yet more people looking for inspiration and models that could help understand the extraordinary capacities of human consciousness. He was known around the world as a seminal figure in consciousness research.

Bob was Dean of the School of Engineering and Applied Science at Princeton University from 1971 to 1986. He was a Fellow of the American Physical Society and of the American Institute of Aeronautics and Astronautics, and an influential member of numerous other technical organizations. He was a founder and long time Vice President of the Society for Scientific Exploration, and Chairman of the Board of the International Consciousness Research Laboratories consortium. He was a member of the Board of Directors of Hercules, Inc. and Chairman of its Technology Committee, and Chairman of the Board of Trustees of Associated Universities. This is a small sample of the long list of Bob's achievements, but it is safe to say

¹ Editor's note: As this issue was going into press news came of the death of Professor Robert Jahn. Roger Nelson was kind enough to write an obituary right away and we plan to have more about Jahn's work in future issues.

that with all his extraordinary contributions in science and technology, his deepest feelings of accomplishment were for the study of consciousness at the frontiers of our understanding.

Bob Jahn, besides being one of the top tier officers of a major ivy league university, was a world class physicist running a NASA-funded plasma propulsion laboratory. But he was also a creative and broad-spectrum thinker who somehow escaped the dogmas of “scientific” education far enough to consider with equanimity the mysteries of mind as a part of the physical world. Bob also had a wicked sense of humor, along with an extraordinary memory, which might help explain why he knew all the lyrics of Gilbert and Sullivan. He combined high seriousness with unfettered creativity, resulting in sometimes whimsical reflections on the conundrums science is designed to untangle. I recall Bob’s charming sketch of two ducks, evidently engaged in a difficult scientific discussion. He labeled it simply “Paradox”.

A few far-seeing individuals with impeccable credentials in the sciences make room in their research agenda for questions linking consciousness and physical systems, mind and matter. Precisely these questions led Bob to create the PEAR laboratory in 1979. He was impelled to do so after seeing results from an independent research project he sponsored for a student in electrical engineering and computer science. The student had asked him for help when she found none of her professors would monitor her work attempting to replicate Helmut Schmidt’s psychokinesis experiments using an electronic random number generator and experimental protocols she had developed. He encouraged her to study the relevant professional literature and organizations.

Ultimately Bob decided the reports and the serious engagement by a small cadre of dedicated researchers in parapsychology justified a substantial high-technology look at the possibility that consciousness might interact directly with physical systems. Was there some fundamental error in what looked like good, though sparsely supported research? Or was there a possibility that the surprising indicators from PK experiments and the remarkable results of remote viewing work might point to fundamental processes and aspects of the world that were not accounted for in standard scientific models? The next step was to find support for a solid research program and Bob turned to friends in the engineering and technology community and in the ranks of Princeton alumni. One of the major sources of support in the early years of the PEAR lab was James S. McDonnell, a fellow Princeton alumnus and the founder of McDonnell Douglas Aircraft. He had both personal and professional interests in the topic and provided funding through the McDonnell Foundation.

PEAR soon became one of the most productive psi research centers in the history of the field. Together with Brenda Dunne, who managed the lab, and a team of scientists from several fields, Bob broke new ground while also confirming and replicating research from many other sources. News of the Princeton group’s experiments spread quickly worldwide, among people interested in paranormal phenomena, including psychokinesis and various forms of extrasensory perception. Notable figures from Europe and Asia stopped by. Keith Jarrett, the jazz pianist, paid a visit. For a time, the philanthropist Laurance Rockefeller visited regularly and donated money for research.

The PEAR lab had three major aspects, one assessing mind-machine interaction (MMI), one looking at remote viewing, most notably precognitive remote perception (PRP), and a third focused on theory and modeling. Over nearly three decades until closing in 2007, the lab built and used highly refined physical experiments including a classic random event generator (REG)

whose behavior participants attempted to influence by intention alone. The REG instruments developed through three generations, eventually allowed expansion into the field for “natural” experiments looking at group consciousness. Bob’s aesthetic sense ensured that the physical experiments were not only precise, but beautiful. The “pinball machine” was worthy of a place in a technology museum and the “linear pendulum” would be at home in a great modern art gallery. He also wanted the place where people would be asked to attempt “impossible” tasks to be a comfortable, warm and human environment. He understood that useful mind-machine experiments would have to be a mutually respectful combination of the aesthetic and the scientific.

Bob Jahn was a thought leader, and a careful scientist who knew that only the highest quality, most rigorous protocols would be able to overcome biases against the study of the subtle interactions of consciousness with its environment. He knew that though supported by the research results, conclusions would not be easy to defend against skepticism. But it was equally clear that the implications of the remote perception and mind-machine experiments were important for both science and society. They were important to Bob personally as well, as he colorfully suggested early on: “I have accumulated a substantial pile of blue chips as a high technologist, and I am planning to spend them in research that matters deeply on the human scale”. That he did, and it was a worthy investment.

Journal of Parapsychology, 81(2), 109-142

Abstracts from the 60th Annual Convention of the Parapsychological Association

The “Vienna Circle” and Parapsychology

Peter Mulacz

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The “Vienna Circle” was a rather informal group at the University of Vienna, comprised of scientists mainly drawn from the natural and social sciences, logic, and mathematics, and of a few philosophers, chaired by the philosopher *Moritz Schlick* though originally founded by the mathematician *Hans Hahn*, who remained the pivotal personality until his untimely death. The philosophical position of the Vienna Circle who met regularly from 1918/1924 and until 1936 was Logical Empiricism (Logical Positivism or Neopositivism). Its main aims were the critique of metaphysics, the search for an empiricist criterion of meaning, and the unification of the sciences in a postulated Unified Science. Given the pronounced anti-metaphysical position of the Vienna Circle it might come as a surprise that several members of the Circle, foremost *Hans Hahn*, took a keen interest in parapsychology (irrespective of the fact that linking parapsychology to metaphysics is but a widespread misconception by laypersons). On the other hand, when considering their empiricist position (supposed to be open towards new empirical phenomena), one might be astonished that this interest was partly met with lack of understanding or even harsh critique.

During the years following the end of World War I there were different groups in Austria, almost exclusively in Vienna, interested in promoting investigations in psychical research. Associations and institutes were founded with great ado in the newspapers and shortly afterwards vanished without traces. Only *Ubald Tartaruga*’s “Viennese Parapsychological Institute” operated for some years and published several brochures. Following a suggestion by the vice president of the Austrian Academy of Sciences, a committee of professors of various disciplines in medicine and science from the University of Vienna was formed to investigate the phenomena of the then famous medium Rudi Schneider. The committee did not arrive to a solid conclusion and dissolved itself again. *Schlick* was a member of this short-lived committee.

Late in 1927, following her lecture on the famous Zugun poltergeist case at the Third International Conferences of Psychical Research held in Paris, *Zoë, Countess Wassilko-Serecki*, together with the theoretical physicist *Hans Thirring* (of the Ernst Mach Society affiliated to the Vienna Circle) and several other interested persons, mainly scientists from the University of Vienna, established the Austrian Society for Psychical Research. (It might be added that this society, after a hiatus during the years 1938 to 1945, was re-founded after the war and is still in existence, however, presently operating under the denomination Austrian Society for Parapsychology and Border Areas of Science.). *Hans Hahn*, a founding member of the Austrian SPR, served on the board and later as their president. In 1930, the fourth of these international conferences took place in Athens with Austrian psychical researchers *Hans Hahn, Countess Wassilko, Alfred, Baron Winterstein,*

Karl Camillo Schneider, and *Daniel Walter* attending and (except for *Hahn*) presenting papers.

In sum, although *Schlick*'s interest in parapsychology was limited, *Hahn*'s and *Thirring*'s engagement in various areas of parapsychological research including their own experiments with various mediums was enthusiastic; *Gödel* carried out telepathy experiments and believed in ghosts; *Menger*, however, was intimidated by an encounter with RSPK (poltergeist) and decided to stay away from the area. *Carnap* showed at least a certain interest in the field indicated by an argument with *Wittgenstein* (himself not a member of the Vienna Circle) who held parapsychology as "utterly rubbish". *Neurath* reproached *Hahn* for his participation in séances, so *Carnap* reports, arguing that such activities would "encourage supernaturalism", which was countered by *Hahn* who stated that scientists have the right to investigate all incidents or supposed incidents regardless of whether or how others might use or misuse their results. *Hahn* died in 1934 and *Schlick* was murdered in 1936 by a former student. With two main protagonists dead as well as with the increase of anti-Semitism in the 1930s and the subsequent emigrations of its Jewish members, the Vienna Circle dissolved even before the Nazi takeover.

Freud as a Psychical Researcher: The Impossible Freudian Legacy

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Sigmund Freud constantly attempted to distinguish psychoanalysis from occultism by explaining allegedly paranormal phenomena (such as so-called prophetic dreams) as the results of unconscious processes. His attitude towards the paranormal, however, evolved according to his increasing interest in the possibility of thought transference. In 1925, he reproduced Gilbert Murray's experiments associating telepathy and free associations. He became convinced then of the reality of thought transference and shared his conviction in "The Occult Significance of Dreams". Yet, Ernest Jones, his biographer and then president of the International Psychoanalytic Association, was reluctant to associate psychoanalysis with psychical research and worked to marginalize Freud's interest. This article aims to retrace the context of this rarely discussed text and the experiments that preceded it to re-examine their role in ulterior definitions of the Freudian legacy and the association of psychoanalysis with experimental research on telepathic dreams.

A Brief History of Psionics

(Schmeidler Outstanding Student Award, 2016, Invited Address)

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The term *psionics* was presumably coined by Jack Williamson and is presumably derived from parapsychology's psi concept. *Psionics* originates in the science fiction literature of the 1950s

and '60s, and since then it has become a well-known meme of Western popular culture, used, for example, in the renowned tabletop role-playing game *Dungeons & Dragons* and the *StarCraft* video game franchise. Over time, psionics has become associated with psychic energy as well as gadgets that are supposed to function by means of such energy. In the parapsychological literature, the term *psionics* occurs only rarely, whereas the term *psychotronics* is slightly more frequently used. These two terms are not only lexically related but also seem to overlap in meaning, as psychotronics is occasionally associated with psychic energy and instruments related to such energy.

Moreover, *psionics* has been used as a label for certain techniques practiced as part of a subculture. The so-called *psiball* and *psiwheel* are presumably the most prominent of these techniques, and they can be traced back to the theosophical and academic literatures from the late 19th and early 20th centuries. A psiball is a ball ostensibly formed out of psychic energy, resembling what is called *thought-form* in theosophical literature. By contrast, a psiwheel is a paper cone placed on a freestanding pin and supposedly set in motion psychokinetically, resembling what is called *sphenometer* by Paul Joire (1916) as well as an instrument without precise designation constructed by Charles Russ (1921). New Age books from the 1970s and '80s used the psionic(s) label, took up these early references, and presented their own versions of these techniques.

In the 1990s, online energy communities, which used these techniques, were formed. One of the earliest online primers featuring a psiball was the *Practical Psychic Web Book*, later called *Playful Psychic*, by Jenny Gable alias Skywind. This primer later was hosted on presumably the most frequently visited website on this topic, PsiPog.net, short for "Psychic Students in Pursuit of Guidance," created by Sean Connelly alias Peebrain. The term *psionics* appears only rarely on Gable's website and more frequently on PsiPog.net. These two websites and similar ones have provided articles on certain other techniques as well. Over time, a comprehensive vocabulary has developed, reflecting the fact that these communities engaged in theory building. Remarkably, a change in meaning gradually occurred. Psi in this context is no longer a collective noun for ESP and psychokinesis, which require explanation, but it denotes an energy or substance that is supposed to explain how ESP and psychokinesis function.

Many terms of the communities' vocabulary can be traced back to fictional and New Age literatures. However, many of the techniques' descriptions appear to have been derived empirically. By her own admission, Gable was psychic to a notable degree, recognized already at a very young age. Assuming this is true, she arguably could teach other people not only from books but also from her own experience. Overall, advantageous conditions were in place when the techniques and terminology developed in these communities. First, the purpose of the generic members was not to become famous or make money but to teach and learn from and with each other. Second, they took a highly pragmatic approach with only a minimal metaphysical framework. Third, doing this on the internet has allowed people from all over the world to participate. If psychic abilities—assuming they exist—are a rare gift, these platforms might have provided the opportunity for people who were gifted or motivated enough to become so to connect on an unprecedented scale. Of course, not everyone involved must have necessarily been talented.

Looking at psi from such an amateur perspective might allow a rediscovery of topics in parapsychological research that are neglected nowadays but may be valuable for theorizing. First, although psi phenomena are often depicted as being non-local in nature, they might also entail an element with local properties. Such an element might function as a proxy for more remote sources of information, and information might be transmitted locally by this proxy. Second, it might be easier to receive emotional rather than rational psi information, possibly because the former is more salient. Third, assuming these assumptions prove to be true, a part of what constitutes psi abilities might be open to learning and even transfer.

The Creation and Validation of the Belief in the Supernatural Scale

Malcolm B. Schofield, Ian S. Baker, Paul Staples, and David Sheffield

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This study presents the development and validation of the Belief in the Supernatural Scale (BitSS). The BitSS acknowledges the nuanced nature of religious and paranormal beliefs and enables researchers to measure them both together, and separately, with equal degrees of clarity. The measurement of these concepts has been problematic because the primary measure in the field, the revised Paranormal Belief Scale (rPBS) (Tobacyk & Milford, 1983), contains a *traditional religious belief* subscale indicating that religious belief is regarded by researchers as being an aspect of paranormal belief. The term *supernatural belief* has been used to refer to either “paranormal” or “religious” concepts and such arbitrary use is dependent on what the researcher is investigating. In contrast, Metaphysical Chauvinism Theory (Beck & Miller, 2001) suggests that people can believe in different “supernatural” concepts and that there should be a separation of religious and paranormal beliefs.

Although measures such as the rPBS and the Australian Sheep Goat Scale (ASGS) are sound measures, there is a need for a scale that can measure the overarching concept of supernatural belief, incorporating both religious and paranormal beliefs, whilst maintaining the distinctions between them. Two studies were carried out to create and validate a new scale to measure supernatural belief. A total of 382 participants (study one) and 318 (study two) were recruited from the University of Derby and via social media. In study one an item pool was created by taking items from previous scales that measure religious, spiritual, and paranormal belief.

There were three stages in the process of selecting items for the item pool: stage one was the initial search for scales to draw items from; stage two was an evaluation of the scales from the initial search; the third stage was the evaluation and possible modification of the items. A 204-item pool for the new scale was generated. This was reduced to a pool of 71 items after review by experts and non-experts assessing for face validity and if they agreed the items measured religious, spiritual, or paranormal belief. This was then analysed using inter-rater reliability showing a fair agreement between reviewers. An Exploratory Factor Analysis was run on the 71 items to establish item redundancy and initial factor groupings in the proposed scale. A 44 item, five-factor solution was selected. The factors were labelled in the following way: factor one was named *mental and psychic phenomena* due to the items in the factor related to such things as ESP or mental telepathy. Factor two was labelled *religious belief*, with the items focussing mainly on religious belief and different aspects of God. The third factor was named *psychokinesis*, having items that related to concepts such as levitation or the movement of objects using the mind. The fourth factor was named *supernatural entities*, with items relating to supernatural beings such as demons, angels or a supreme being. The fifth factor was named *common paranormal perceptions*, with items relating to haunting or poltergeists.

The aim of study two was to conduct a Confirmatory Factor Analysis on the BitSS developed in study one using a fresh sample of participants. The fit indices showed that the data were not a perfect match to the model. It was concluded that this was because of the model’s complexity and the large sample size. Therefore, the model structure and the number of items were retained. The model was also correlated with three other measures of spirituality, religiosity, and paranormal belief. The BitSS scale correlated highly with the scale measuring paranormal belief, and moderately

with the other two scales. The BitSS scale showed good test-retest reliability with a three-month follow-up study showing a high correlation.

The new scale successfully captures the nature of supernatural belief and provides a wide range of items. The clear delineation of religious and paranormal belief emerging from these factor analyses supports the Metaphysical Chauvinism Theory (Beck & Miller, 2001) and concurs with previous research that distinguishes religious and paranormal believers. This further strengthens the proposition that religious belief should not be defined as a paranormal belief. The five factors of the new scale encompass the aspects of the supernatural well and are easy to interpret, by having a strong meaning based on theory, research and previous scales and factors. The new scale provides insight into how these three concepts of religious, spiritual and paranormal belief might fit together. Although religious and paranormal beliefs show a clear divide, spiritual belief is spread amongst the factors. The rPBS is a psychometrically sound scale but the BitSS has more items covering fewer factors than the rPBS and arguably a clearer factor structure. The BitSS adds another useful tool for the measurement of these types of belief that can be used alongside the rPBS, ASGS, and other measures to assess the personality and cognitive correlates of these types of belief.

Anomalistic Psychology, Parapsychology, Psychology of Magic and Psychology of Religion: An Integration Proposal to Deal with the Complexity of the Paranormal

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Anomalistic psychology, parapsychology, psychology of magic, and psychology of religion have different agendas and backgrounds, but their objects of study have strong connections and the consequences must be considered. Through a historical, conceptual, and methodological discussion, we present an integration proposal. Anomalistic psychology and parapsychology study “paranormal” experiences and beliefs under specific perspectives and backgrounds. Psychology of magic focuses on psychological processes underlying magic tricks, such as memory, social influence, perception, cognitive biases, etc. Psychology of religion studies religious experiences, behaviors, and beliefs. But the intersections between these areas are so many that it is possible to conclude that they study facets of the same topic.

Parapsychology, psychology of religion and anomalistic psychology were unified in the late 19th and early 20th centuries under the label “psychical research”. However, after the dismemberment of psychical research into specific agendas and political/ideological interests throughout the 20th century, researchers and literatures in these areas tended to maintain a state of mutual alienation. Psychologists of religion, historically, tend to be at least sympathetic to the existence of transcendence. “Traditional” anomalistic psychologists, historically, tend to be against the existence of paranormal processes. Parapsychologists, historically, tend to be supportive of paranormal

processes. Each of these tendencies creates assumptions and other biases that eventually result in studies that legitimize – possibly thanks to the expectation/experimenter effect – these same assumptions. The scenario is more alienating when we consider that they not rarely ignore recent advances in psychology of magic about psychological, cultural, and even biological processes present in many religious and paranormal experiences and beliefs. As a result, each area struggles against tough questions without knowing that the other three have concrete or even decisive contributions to make, which would advise integration. Such a broader perspective of an inclusive anomalistic psychology, coupled with improved research techniques in each of the four fields, would allow a greater dialogue between phenomenological and ontological approaches that could lead the study of anomalous experiences a step beyond what we currently achieve. We discuss the subject of classic paranormal beliefs versus religious paranormal beliefs and data from two Brazilian religious groups that perform healings based on prestidigitation, misdirection, and claims of extraterrestrial contact. At the end, we present some results of such an integrative proposal in the Brazilian academic community. Thus, we believe that the proposal of an inclusive anomalistic psychology has not only theoretical support but also a tempting practical success in terms of academic acceptance and productivity.

Training Anomalous Cognition in a Motor Task with Subliminal Auditory Feedback

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The purpose of the study was to train anomalous cognition (AC) in a motor-automatism task with subliminal auditory feedback in 5 participants (Ps) selected on evidence of high state dissociation (reports of their hand being moved by an outside force during the AC task) and trait dissociation (high scores on the Detachment subscale of the Dissociative Processes Scale) in a previous motor automatism experiment. The formal hypothesis was significantly higher AC scoring after training than before training by the Ps, both individually and collectively. The motor task is administered on a computer writing tablet on top of which is affixed a 4-inch grid conceptually divided into 16 1-in. squares conceptually divided into 4 quadrants of 4 squares each. One of the squares was randomly assigned as the target for each of the 60 trials in a run. The surface was covered by a Google map of barren terrain to support the theme of map dowsing with no lines indicating the squares. Ps were instructed to explore the grid by moving the computer pen over its surface until their intuition indicated them to stop. After they stopped for 1 second their response was registered as the corresponding square. If they stopped on the target square they got a “square hit” ($p = 1/16$). If they stopped on any square in the correct quadrant, including the target square, they got a “quadrant hit” ($p = 1/4$). They then resumed moving the pen for the next trial. The hit totals were converted to z -scores to standardize them. The average of these two z 's represents “location zs ”, the dependent variable. Ps attended 2 1-run “baseline” sessions at the beginning of their participation and 2 1-run “test” sessions at the end. In between, they completed 15-20 1-run training sessions. The procedure for these runs differed only in that after each trial P heard 1.5 seconds of brownian (similar to pink) noise. If the trial was a quadrant hit, the noise had superimposed on it the spoken word “good”. If the trial was a square hit, the words “good good” were superimposed. A threshold test prior to training assured that the words were subliminal for all Ps. One of the 5 Ps (P5) sig-

nificantly confirmed the hypothesis, and there was suggestive evidence of AC in the baseline and/or test results of 4 of the 5 Ps and the five difference scores showed significant between-subjects variance. There was no evidence of learning in the training sessions, so the success of P5 cannot be attributed to it.

According to the underlying theory, the conditions for learning were not met because Ps were overly attentive to the feedback sounds, often detecting between-trial variations in the sounds that threshold testing indicated were not actually present and misinterpreting these as indications of hitting. The significant effects should be considered tentative unless and until they are successfully replicated. Nonetheless, the large number of suggestive or significant findings in the baseline and tests sessions in individuals pre-selected for dissociative tendencies and dissociative responding in a similar task in the past encourages further research on the relation of dissociation with psi in the laboratory. I am grateful to the Bial Foundation for their support of this research.

Do Changes of Thermodynamic Entropy at a Remote Site Enhance the Quality of Anomalous Cognition?

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To determine the degree to which changes of thermodynamic entropy affect the quality of anomalous cognition, we launched a three-year effort funded by the BIAL Foundation. Twenty-two San Francisco Bay Area sites were identified all of which were neutral regarding native changes of entropy. Three individuals independently fuzzy-set coded all sites against a predetermined universal set of elements, which by cluster analysis fell cleanly into five orthogonal categories. Entropic changes at a remote site was accomplished by dispensing three liters of liquid nitrogen (LN) approximately eight seconds into a picnic cooler containing 2,000, $\frac{1}{2}$ inch diameter aluminum balls. Three well-calibrated participants contributed 24 sessions each that were randomly but counter-balanced for an entropic change at the stimulus site. Three experimenters (E1-3) divided the tasks for a single session - E1 tasked a participant (P), "Please access and describe the first thing you see when E1 removes the blindfold." After the session E1 encoded the response into an automated system, which uploaded to the cloud for E3 and notified E2 who randomly chose a site and entropy condition (computer generated), waited a fixed time to obtain (or not) the LN; travelled to the site; on leaving texted E1. E1 blindfolded P and drove to a predetermined spot at the site. E1 oriented P in a predetermined direction and removed the blindfold for feedback. Overall, the effect size for the observed distribution difference between the figure of merit means for the LN pour and LN no-pour conditions was 0.251 ± 0.167 leading to a z-score of 1.503 and $p = .066$. Performance declined between the first and second half of the study for all three participants. The effect size for the first half was 0.425 ± 0.236 leading to a z-score of 1.80 and $p = .036$. The second half of the study produced an effect size for the mean differences of 0.097 ± 0.236 leading to a z-score = 0.411 and $p = .340$. The decline between first and second halves produced $t(34) = 0.984$, $p = .165$, and the effect size for the decline was 0.167 ± 0.172 . This report discusses potential psychological reasons for the decline between the first and second half of the study.

Exploring the Effect of a Contingent Cash-Based Reward on the Precall of Arousing Images

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Precall refers to the explicit recall of target material, such as words or images, where practice sessions occur *after* the recall test with the potential to influence *prior* recall performance. Though such a proposal has been called both provocative and controversial (see Cardeña, 2015) there is some evidence to support it, although it is inconsistent. For instance, Bem (2011) showed that practise on a sub-set of items was associated with higher recall for those items in the memory task *preceding* the task. However, attempts by others to produce similar effects have met with no success (e.g., Galak, LeBouf, Nelson, & Simmons, 2012). Here the aim was to elicit a precall effect using arousing images and examine whether such an effect would be mediated by a cash-based contingent reward. This idea is taken from an early model of psi put forward by Stanford (1974) that suggests that such behaviour may emerge to serve the needs and/or motives of the individual. However, recent attempts to elicit a precall effect using a contingent reward have been unsuccessful (Luke & Morin, 2014). Nevertheless, it is argued here that this lack of success may be due to weak or inappropriate rewards assumed to motivate the participants. Hence, rather than assume that a particular reward must motivate participants, an initial pilot study examined what type of reward would be considered optimal. An on-line questionnaire completed by 29 participants not taking part in the main precall study showed that a £10 cash reward was the most popular option. Hence, this study examined the effect of offering a £10 cash reward contingent on precall performance.

Two confirmatory predictions were made: first, that post recall practise of images would lead to greater precall of those images compared to those not practised. Second, that a contingent reward of £10 would lead to greater levels of precall compared to no reward. This study was pre-registered with the Koestler Parapsychology Unit (ref#1026). A repeated measures design was used with participants completing all aspects of the precall task individually in a quiet psychology lab. The task began with a short relaxation induction, followed by the random presentation of a series of 20 arousing images. After seeing the images participants were given a surprise recall task using the presented images. Following this, a random sub-set of the images was again presented twice, to allow participants to practice. Each participant's precall score represented the number of correctly recalled images *subsequently* repeated and their baseline score represented the number of correctly recalled images not repeated. Prior to analysis, data were checked to ensure that parametric assumptions were met. This revealed a non-normal distribution so a non-parametric Wilcoxon (two-tailed) test was used, which showed that precall scores were significantly higher than baseline ones. However, the contingent reward had no effect on precall scores. That an anomalous effect was evident in the data could be indicative of a Type I error. Alternatively, such a pattern would be consistent with the positive findings of others who have also reported anomalous precognitive effects (Bem, 2011; Maier et al., 2014; Subbotsky, 2013). Furthermore, the effect in this instance was not based on providing feedback, which suggests that feedback regarding performance is not essential for precall to occur. Finally, a speculative possibility that may account for this effect, put forward by Taylor (2014), is that information transfer may be influenced by the phase synchrony of the brain states at the point of recall and the point of practise.

Exceptional Experiences under Placebo God Helmet Conditions

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This study explored the psychology of exceptional experiences (ExE) in a placebo God helmet study, with a focus on presence experiences. Thirty-two strong skeptics and 35 believers in the paranormal were pre-selected by their scores on the paranormal belief scale (PBS). They also completed the Anomalous Experiences Inventory experiences subscale and responded to a question about synesthesia. Each person took part in three study sessions: a morning baseline (no helmet/baseline) session, a morning sham helmet session, and an afternoon sham helmet session. During each session, participants relaxed in a Faraday chamber for 30 minutes with the instruction to observe and verbalize their thoughts, feelings, perceptions, and imagery. Exit interviews explored subjective experiences. An inductive thematic analysis identified a coding scheme used to compare frequencies across study conditions and between believers and skeptics. Transcripts were blind-coded for 15 types of ExE. A series of chi square analyses found that believers have more ExE than skeptics. There were significantly more visual presences, flashes of color, and auditory hallucinations in the sham helmet sessions than in the baseline condition. Results are discussed in terms of prior studies and their implications.

A Test of Morphic Resonance Using Urdu Words

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In 1981 Rupert Sheldrake proposed a theory that the presence of morphic fields influence, through resonance, both the form and behaviour of organisms. These fields change overtime and act as a collective memory for each species and enables individual organisms to produce behaviours, performed previously by at least one other member of the species, without the influence of either biological inheritance or direct observational learning. Although Sheldrake reports several observations of this effect (Sheldrake, 1988) there is a paucity of experimental studies testing this theory. The experiments conducted have primarily focussed on one of two approaches: new field tests that involve the creation of a new resonating effect and testing its influence on sequential test groups, and old field tests that focus on the resonating effect on part of an already established field and testing it in a population without familiarity with it. This research explores the old field of the Urdu language, unfamiliar to most Caucasian people living on the west coast of Canada.

The participants consisted of volunteer students from VIU enrolled in one of two psychology classes and given an incentive of a small course bonus mark for their participation. The stimuli consisted of six common words from Urdu and six fabricated non-words, grammatically designed to be similar to real words. These were selected and created by a native speaker of Urdu. All stimuli were of similar complexity. Booklets were created with ten randomly selected stimuli from the twelve originals, with a minimum of 4 words and non-words in each booklet. In the experiment participants were asked to copy each word from right to left (as written in Urdu) and to indicate whether or not they felt the stimulus they copied represented a word or a non-word. They were also asked to rate how confident they were in their answer on a scale of 0-5. Next, if it they

believed the stimulus to be a word, they were asked to state what they thought it meant and to rate their confidence in their response. At the end of the booklet participants were asked to report how many languages they knew, and if they had recognized any of the stimuli.

Scientific Evidence of Telekinetic Effects on a Spinning Mobile - A Scientific Attempt to Detect and Study Telekinetic Effects even in a Non-confined Environment

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For more than a century, there has been much debate around the use of Telekinesis-Psychokinesis (TK – at the LAPDC we use TK for Telekinesis) to explain the rotating movement of light objects on an upright standing needle in the proximity of a hand. Thermally-induced aerodynamics effects have been considered as likely physical explanation factors. Despite this controversy, many still upload videos claiming the phenomenon on the Internet. Most of the scientific studies performed have focused on whether or not the effects could be observed if some physical constraints were added in order to avoid the aerodynamics factor, or if the same results could be reproduced using some thermic or/and aerodynamic artifacts instead of a human presence. The first approach runs the risk of inhibiting a phenomenon about which little is known. The second has not yet shown clear reproducible experiences providing the same results as with human presence, except in very specific situations. Our objective was to detect and study telekinesis in confined and non-confined environments with scientific measurements. We thought there could be a way to separate telekinetic effects from aerodynamic effects, even in a non-confined environment, thus avoiding the drawbacks of the first approach. This technique to approach anomalous perturbation could be described as partial physical isolation of the target system, with the measurement system ensuring the control of the remaining known effects. This can be related to the two other techniques described in May et al. (1995).

From the beginning, the LAPDC has been fostering a Tkist (participants practicing telekinesis) volunteer team in order to do the experiments. From 2012 to 2016, we have been developing specific scientific methods to study telekinetic effect on spinning mobile with or without confinement. More specifically, we developed a protocol starting with PIV (Particle Image Velocimetry) to measure the air-flow speeds around the mobile. We also created a set of processes around MATLAB, which we named Scan Flow Mobile, which has enabled us to construct a global model integrating air flow movements and mobile movements, and scrutinize it. Using this procedure, we were able to compare different experiments and conducted a thorough analysis of the interaction between the mobile and the air flow, and cause-and-effect relations. A review of the “spinning mobiles” literature of the last century, either with the telekinesis hypothesis or aerodynamic/thermic explanation, has been done. We also studied other motion potential causes, such as electrostatic forces, magnetism, vibrations, and radiation impacts. Then, as a pilot study, we conducted 8 experiments (10 results cases) in non-confined environments, with 3 set-up categories: one where the mobile motion was driven by generated air-flows (A), one in which a motor drove the mobile (M), and the last one where Tkist drove the mobile (T). The ratio (mobile speed/mobile periphery air-flow speed) was used as a way to compare effects between each other and between categories.

With regard to this ratio, the category T and M experiments stayed above or equal to 2 while category A was below or equal to 0.5. This separated clearly pure aerodynamic effects (A) from the evidence of telekinetic effects (T). One T experiment even presented a 0.13 ratio, which means that the mobile speed was 7 times greater than the air-flow speed. The Tkist experiments were realized in different places, with different Tkists and different material set-ups with the same protocol.

We present a potential bias and errors analysis, moving from the difference between fluid and particle velocity, to the mean speed evaluation for the air flows and the mobile, to the final ratio, and show that the results above are not affected significantly. Indeed, we evaluated the potential error at more or less 8.9% of the ratio air-flow speed/mobile speed, which is marginal against the ratios seen above. So, in this pilot study, the experiments showed evidence of telekinetic effects on a spinning mobile and a scientific approach to separate these telekinetic effects from the pure aerodynamic effects in a non-confined environment. In order to confirm these results, we will improve our protocols and try to reproduce T experiments with significant ratios. We will also try to improve the total measurement process documentation in order to give the possibility for other labs to reproduce these experiments. We have chosen until now to use a kind of mobile not too sensitive to air flows, so it was easier to develop in our protocols. For example, its weight is 2.4g, heavier than light objects such as aluminum paper psi-wheels and Egely-Wheels (The Egely Wheel is marketed as an instrument to measure life energy, chi, or vitality, Egely, 2017), whose weights are 0.1 to 0.2 g and 0.5 g respectively. We are studying these mobiles currently, trying to reproduce the same phenomenon using some thermic or/and aerodynamic artifacts instead of a human presence, and with PIV measurements.

Implicit Psi in a Stimulus Detection Task: Can uPK and Precognition Affect Perceptual Performance?

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Over the past years, it has become increasingly apparent that perception is not a passive process: how stimuli appear is not just a function of stimulus properties, but also of the memory and expectancies of the observer. In an experiment testing the effects of stimulus randomization on these expectancy processes, we have reported an anomalous effect of apparent precognition. Here we show that there may be another anomalous effect in play in stimulus detection tasks, namely psychokinesis. In a simple stimulus detection experiment, we used quantum-random versus pseudo-random generated stimulus sequences. If pseudo-generated sequences contain implicit structure, we would expect better performance for these sequences. Contrary to this prediction, we found participants performed better and faster in the quantum-random generated sequences. We explain this result in terms of the observation theory-framework, which postulates that psi-effects are closely related to the radical subjective solution of the measurement problem in quantum mechanics. Our results can be explained by assuming a combination of PK and precognitive priming effects for quantum-random generated sequences. We describe a replication experiment to formally test this hypothesis.

The Selfield: A Precognition Study Using an Immersive Display System

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In a previous project, we presented a telepathy study which we hoped would be both psi-conducive and efficient in terms of data-collection; it involved coupling a multiple trial forced-choice protocol with participant optimization procedures involving immersive hardware and software. Overall results were not significant, though they did show significant variability, possibly suggesting a combination of psi hitting and psi missing.

The current exploratory study is broadly inspired by the previous one, but introduces several improvements in the optimization procedures, as well as a shift from a dyadic-participant approach, to a single participant protocol focused on precognition. This shift was motivated in large part by the rather positive track record of recent precognition research – as witnessed by physiologically based presentiment studies, and by the reverse-causality social psychology studies recently introduced by Daryl Bem. We thus decided to opt for a single-participant precognition protocol, both because it is comparatively easier to implement than telepathy protocols and because it seems promising in terms of replicability.

A second, more process-oriented objective for this study, was to better grasp the role of feedback in multiple-trial psi tasks. Both theoretical and psychological reasoning would suggest that trial-by-trial feedback should contribute to scoring, either by injecting outcome information into earlier choices (according to a retro-causal model), or by helping individuals to zero in on productive mental strategies as they proceed through an experimental session. On the other hand, as some participants in our previous study indicated, it may be that trial-by-trial outcome information induces stressful, performance-oriented mindset, offsetting the learning gains that might come with feedback. Thus, as part of our objective of producing a multi-trial psi-conducive protocol, we sought to assess feedback vs. non-feedback scoring under motivationally equivalent conditions.

Finally, this study was also intended to provide us with an empirical effect size estimate, which in turn would allow us to specify power requirements for future replications. A pre-set total of 3,000 binary choice trials were collected from 82 volunteers over a 7-week testing period, each individual contributing either 20 or 40 trials, in accordance with pre-set criteria; 26 participants were regular meditation practitioners, invited by one of us (PAB) who is affiliated with a local Buddhist center. All volunteers were tested either by MV or PAB at the Institute Métapsychique in Paris, using a specially constructed immersive environment and audio-visual sequences used for the psi task. The task consisted of selecting and opening spherical image containers that emerged out of a hypnotic animated starfield. Following the participant's choice, a binary random decision would decide whether s/he would obtain a miss or a hit, and whether the hit-miss feedback would be shown. A hit resulted in the emergence of the portrait of an animal or an interesting or famous personality staring directly at the participant and growing in size. Misses were associated with a noisy withdrawal of the sphere back into the starfield and no-feedback produced a simple fadeout of the sphere container.

The results for the 3,000 trials were non-significant. The overall hit rate came in at null expectation (50.1%), and although feedback trials did have a higher hit rate than no-feedback trials

(51% vs. 48.6%), the *t*-score for the difference was only 1.29 ($p = 0.10$, *ot*). Nevertheless, these results, as well as several exploratory analyses, suggest directions for further study. First, the difference between feedback and no-feedback hit rates indicates that a 0.05-level replication at 80% power could be achieved with only a modest increase in the number of trials. A positive replication would encourage the idea that feedback may be useful to individuals, provided it does not disrupt the “flow” state or induce a performance mindset. Second, hit rates tended to increase over the course of a 20-trial series. A regression of trial-ordered hit rates found higher hit rates for later trials ($p = 0.04$, *tt*). In other words, subjects may have progressively found a mental strategy or a state that produced better scoring, which would accord with responses in a post-session questionnaire, where 89% agreed that “scores would improve with continued training”.

Finally, the 26 Buddhist meditators had a group hit rate of 52.1% ($p = 0.09$, *ot*) and the subgroup judged to be the most experienced had a hit rate of 54.7% ($p = 0.01$, *ot*). This finding contributes to the growing literature that suggests that experienced meditators are particularly good subjects for psi research. We are thus planning to follow up with our protocol this year, focusing more specifically on an experienced-meditator population. We would like to express our deep gratitude to the Bial Foundation for its support of the Selfield project.

Descriptive Analyses of Various Anomalous Experiences of Nurses and Carers: Personality, Perceptual, and Cognitive Factors Associated with Anomalous/Paranormal Experiences Reported by Nurses

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A number of anomalous/paranormal experiences (APE) have been reported by nurses (Barbato, Blunden, Reid, Irwin, & Rodriguez 1999, Fenwick, Lovelace, & Brayne 2007, O'Connor 2003) and doctors (Osis & Haraldsson 1977, 1997) consisting of apparitions, “coincidences”, death-bed visions, and other phenomena, sometimes in relation to patients, and other times to nurses, carers, and doctors themselves in hospital settings (Barret, 1926, Kübler-Ross, 1971; Osis & Haraldsson 1997). Nursing provides a wide range of potential workplace stressors (potentially causing hallucinatory/imaginative experiences), as it is a profession requiring a high level of skill, teamwork in a variety of situations, provision of 24-hour delivery of care, and input of what is often referred to as emotional labor. The importance of empathy in the nursing context is related to a core of common aims and purposes, and there is general understanding that nurses' empathic attitude is important for patients' adherence to treatment. A capacity for absorption, by itself, may not be a sufficient trigger for paranormal/anomalous experiences. It could be postulated that people must also have a motivation or need to experience absorption, as well as a situation suitable for inducing workplace stressors and empathy with patients, such as a hospital setting.

The aim of this study was to determine the degree of occurrence of certain unusual perceptual experiences in hospital settings, so called Anomalous/Paranormal Experiences (APE). We hypothesized that nurses who report APEs will tend to score higher on (H1) work stress; (H2) schizotypy proneness, (H3) absorption, and (H4) empathy than those who do not report such experiences. Three hundred and forty-four nurses were recruited from 36 hospitals and health care centers in Buenos Aires, Argentina, with a total of 235 experiencers (78% female and 22% male) and 109

non-experiencers (81% female and 18% male). The most common experiences were sense of presence and/or apparitions, hearing noises, voices or dialogues, crying or complaining, intuitions and ESP experiences and, as listeners of experiences of their patients, near-death experiences, religious interventions, and many anomalous experiences in relation to children. Inspired by accounts of nurses in our interviews and the literature (Fenwick, Lovelace, & Brayne 2007, 2010, Fenwick & Fenwick 2008, Osis & Haraldsson 1977, O'Connor 2003) a self-report with 13 yes/no items was designed, and four scales were used: Maslach Burnout Inventory, Tellegen Absorption Scale, Interpersonal Reactivity Index, and Oxford–Liverpool Inventory of Feelings and Experiences – Revised.

Although H1 was not confirmed, APEs experiencers scored higher on Depersonalization absorption, proneness to schizotypy, and cognitive empathy and emotional comprehension. However, H4 was not confirmed. Additional results included a tendency to report APES by nurses with higher length of service (although it was not related with age), and that the best predictor was absorption in experiencers compared with non-experiencers.. It may be that cognitive style is more important than capacity or skill, as in the case of absorption, which refers to the extent to which a person can be so engrossed in a mental experience at a given moment that reality monitoring is temporarily inhibited. However, neither of these variables (absorption or hallucination proneness) was found to be related to work stress, although it could be argued that the psychological pressure of the working conditions of nurses triggers such anomalous perceptual experiences. Nor were there indicators of psychosis proneness found, even in the experiencers with hallucinatory experiences.

The Bélmez Faces: An Investigation of a Supposedly Strong Case

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The so-called Bélmez faces attracted considerable attention in the public and the media, as well as in the mostly European parapsychological community, in the early 1970s. In 1971, phenomena of supposedly paranormal origin occurred in the Spanish village Bélmez de la Moraleda. Discolorations appeared on the concrete floor of the house's kitchen, interpreted as images of faces of paranormal origin. The events were strongly connected with the physical presence of the 52-year-old María Gómez who was living in that house. Several investigation commissions and individual researchers visited the place and tried to solve the puzzling origin of the faces. Due to sensational press coverage, a lot of tourists visited the "house of faces". As a reaction to this, and in particular to a series of articles in the evening newspaper *Pueblo*, the (provincial) government, among others, tried to suppress the news and the national press started a campaign against Bélmez, apparently based on fake news and false accusations by a journalist. Unfortunately, these fake news were taken over by the international press and had a considerable negative effect on the following developments.

Relatively little has been published on the Bélmez faces by scientists. One of the first extensive investigations of the case was conducted by Professor Hans Bender (1907–1991), founder of the Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP) in Freiburg, together

with a Spanish scholar interested in paranormal phenomena, Germán de Argumosa (1921–2007), who had informed himself about the phenomena. Between 1972 and 1973, Bender visited the location three times to get first-hand impressions of the phenomena as well as of the persons directly involved in the case. Furthermore, he conducted interviews and gave lectures on parapsychology in Jaén and Madrid on May 21 and 23, 1972. He made several methodological suggestions to get more convincing evidence for paranormal events, by means of a documentation made quite immune to fraud. Thus, he suggested covering the whole kitchen floor with a plastic sheet and sealing it so that nobody would be able to manipulate the floor in order to create new faces by normal means. Several reasons can be found to explain such an enormous effort: In Bender's opinion, the case – at least in its initial phase – could become very important for parapsychology. In this respect, the specific nature of the phenomena played an important role in the sense that the appearances were not elusive to the extent as is typically the case with RSPK phenomena. They seemed to have the character of permanent paranormal objects (PPOs). A further reason for addressing the faces of Bélmez was added in 1973: a German TV channel, with Bender as its scientific advisor, conceived of a 6-episode series on parapsychological topics under the title *Psi* for which exciting documentary material, preferably filmed under "live conditions", should be collected under Bender's supervision. Thus, parts of the on-site examinations took place in front of television cameras. They also planned to get spectacular recordings connected with a replication of an experiment conducted about one year earlier: the opening of the sealed room, the removal of the floor coverings, and verifying whether new faces had appeared under these controlled conditions.

However, the results did not meet expectations, although some changes of the already existing faces could be detected, and one small face seemed to have disappeared in comparison with the photographs made before covering and sealing the floor. But given the very small changes of faces this observation cannot be taken as strong evidence because the quality of the photograph taken before sealing the floor was too bad to make a reliable assessment. Regarding the first experiment of this kind in October 1972, the results seemed to be of better quality but methodological shortcomings (premature unsealing of the floor without presence of a notary due to the occurrence of considerable amounts of water, not taking documentary photos of new developed faces due to a faulty developer) reduced the evidence to eyewitness testimonies. Although Bender seemed personally impressed regarding the genuineness of the phenomena, he stated later in a telegram: "Technical obstacles prevented reaching intended highest level of documentary evidence".

Given Bender's reputation as an internationally renowned researcher, the public opinion (media) switched again in favor of the paranormal origin of the faces. The intention of my presentation was to give an impression of how Bender approached the investigation of spontaneous cases. It should demonstrate his personal motivation as a researcher as well as illustrate the somewhat complicated interplay between an alleged RSPK case in its public sphere, the social role of so-called skeptics, and of mass media looking for a "good story." It is based on archival material mostly kept at the IGPP, including extensive correspondence between Bender and Argumosa, investigation reports, unpublished manuscripts of lectures, transcripts of telephone conversations, and newspaper articles. In contrast with these primary sources, several statements found in books and articles dealing with Bélmez are based on secondary sources and must be dealt with great caution because they often perpetuate false beliefs and unverified facts. At least, we are able to get a somewhat less biased picture. Far from being solved, the Bélmez case shows the ingredients of a typical RSPK case as well as typical reactions by scientific colleagues, skeptics, and the public.

“Logic is only Half the Equation”: Exploring Psychedelic Drug Usage and Transformation of Identity, Spiritual Awakening, the Transcending of Ordinary States of Consciousness and Enlightenment Experiences Following LSD Consumption

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In 21st century academia, we are witnessing the re-emergence of scientific interest in psychedelic compounds despite the obvious challenges posed by ethics committees. This is otherwise known as the *psychedelic renaissance* (Sessa, 2012). The experiences of taking psychedelic drugs (often referred to as taking a “trip”) may be difficult to articulate for a number of reasons that defy conventional scientific reasoning. Reports (often anecdotal) include anomalous accounts such as out of body experiences, intense hallucinations, increased sensuality to the immediate environment and other people, experiencing spiritual awakening, the death of the ego, and brief glimpses of spiritual and ecological enlightenment resulting in changes in one’s ego structures and sense of self (Luke, 2012).

Content Analysis of Spontaneous Cases of Psi Included in the Alister Hardy Religious Experience Research Centre Database

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In this paper, we argue that research should be grounded in the experience of real people to ensure that findings have ecological validity and avoid the kind of artefacts that can result from experiments that derive from — and produce data that only really bear on the interpretation of — other similarly conducted experiments, giving a circularity that has no real-world point of contact. An important source of phenomena as they are experienced in the real world is case collection analysis. Unfortunately, this approach has fallen out of favour with researchers, such data as we have tends to be derived from earlier classic studies (e.g., Rhine, 1962a, 1962b; Sannwald, 1963; Schouten, 1981) or from collections of cases that are not subject to systematic analysis (e.g., Feather & Schmicker, 2005; Fenwick & Fenwick, 1997; Haraldsson, 2012; but see also Cook, Greyson & Stevenson, 1998; Lucadou & Wald, 2014). To address this shortcoming, in this study we proposed to conduct a content analysis of cases held in the archive of the Alister Hardy Religious Experience Research Centre (RERC), which contains over 6,000 first-hand accounts from people across the world who have reported a spiritual or religious experience.

Initially each case was read in its entirety to determine whether it referred to any experience that could be described as parapsychological. Excluded cases involved: descriptions of personal philosophies or metaphysics; reflections on and analysis of (mainly Christian) scripture; biographical accounts of hardships for which religious faith had been a support; experiences of immanence or nature mysticism; experiences of deep peace and serenity; visions of religious persons or be-

ings, such as Jesus or the Virgin Mary; and cases where psychic phenomena were alluded to but not described in any detail. Our original intention was to review all 6,000+ cases in the database, but while some of the accounts were quite brief (from 50-150 words), many were very substantial (5,000-8,000 words) and took much longer than expected to read and appraise. It quickly became apparent that we could not review all cases in the time available, so we decided to divide the project into two phases: phase 1 would be restricted to the analysis of half of the cases and treated as an exploratory study, while phase 2 would consist of the remaining cases and would be treated as a confirmatory study to see if patterns identified in phase 1 could be replicated. To avoid selection bias (especially shifts in content or circumstances over time) we included in phase 1 cases 1-500, 1001-1500, 2001-2500, 3001-3500, 4001-4500, and 5001-5500. All cases were read initially by either CR or RL, and all selected cases were checked by the other researcher. Any disagreements were discussed and resolved, with 478 of 3,000 cases (16%) retained for further analysis.

A coding scheme was developed that included the main categories of phenomena and their variations: General ESP, Telepathy, Clairvoyance, Precognition, Ineffable foreboding, *Déjà vu*, Apparition experiences (in dreams, sense of presence, visual, auditory, olfactory, tactile), Deathbed experiences (lights, shadow/fog, interaction with invisibles, sudden lucidity, extrasensory knowledge), Near-death experiences (peace and wellbeing, separation from body, darkness/tunnels, seeing light, encounters with others), and Mediumship. We also coded the circumstances of the experiences (while quiet/restful, while wide awake, while alone, while with others) and details of the subject of the experience (spouse, relative). These were tested against a sample of 100 cases and adjustments made to reflect any ambiguities or omissions. Once the coding scheme was agreed it was applied to all cases. CR analysed RL's cases and vice versa. Cases were scored for the presence or absence of content categories.

Unfortunately, respondents usually gave only meagre descriptions of circumstances of events so that there were too few data points to look for covariates in any systematic way. However, it was still possible to look at the incidence and types of phenomena reported and to include details of exemplary cases. Of the 478 cases retained for coding, 296 (62%) included reference to apparitional experiences. These were further coded according to the modality of the experience: Visual (65%), Auditory (41%), Sense of presence (23%), Tactile (19%), Dream (9%), and Olfactory (4%). Examples of cases of these types are presented for illustration. The second most commonly reported parapsychological phenomenon was extrasensory perception, with 227 cases (47%) including reference to ESP, which could be further subdivided: Telepathy (51%), Precognition (39%), 'Foreboding' (32%), General ESP (10%), and Clairvoyance (6%). Instances of extrasensory perception often involved some form of "cry for help" relating to negative events. Some reported experiences did not include perceptual components but instead involved a more ineffable sense of foreboding. More rarely respondents reported experiences of the clairvoyance type, usually involving the location of objects or places.

The RERC scheme did not include a near death experience category. In our analysis, we found 46 cases (10% of the total sample) that included features of the NDE. Reported features included: Encounters with other beings (50%), Separation from the body (46%), Told to return (39%), Peace and wellbeing (33%), Darkness / tunnel (26%), Extrasensory knowledge (13%), and Life review (4%). Another phenomenon type not included in the RERC classification involved out-of-body experiences, yet these were quite frequently reported, occurring in 72 cases (15%). Deathbed experiences were described in 23 cases (5% of the sample). Features described in those cases included Interaction with invisibles (50%), Lights (46%), Sudden lucidity (39%), and Shad-

ow / fog (33%). Similarly, experiences with mediumship were quite common (48 cases, 10% of the sample), and were typically interpreted as providing evidence of survival of bodily death

Reflecting on the study design, we note that quantitative content analysis is limited by the data available. Krippendorf (2013, p. 36) defines content analysis as “a method for analysing textual material that was meant to be read and understood by people other than the analyst”, and, as a consequence, the accounts may not be well suited to the analyst’s needs. The letters sent to Alister Hardy and colleagues in response to appeals for information about experiences in their lives from which they have derived a sense of “something other” are often rich in detail concerning the writer’s life history or their reflections on their faith, but can be frustratingly cursory when describing incidents of interest to us. It would have been useful to have prompts or cues that could have encouraged respondents to report their parapsychological experiences more fully. Content analysis also allows for the inclusion of more qualitative elements in recognition of the idiosyncratic and contextual aspects of individual cases. They also give an indication of the personal impact of experiences—often having profound, long-lasting effects (e.g., Cooper, Roe & Mitchell, 2015)—that are overlooked by more nomothetic approaches. There is a great deal of scope to conduct a more in-depth thematic analysis of the material collected during this project, and our intention is to interrogate this material more fully in the future. We would like to thank the Perrott-Warrick Fund for their kind support of this project and the SPR Research Grants Committee for a grant to enable Rebecca Linnett to work on the study.

The Relation of Psi and Alterations of Consciousness in Ganzfeld and Hypnosis Contexts

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In a previous experiment with high (Highs) and low (Lows) hypnotizables, psi z scores (calculated by subtracting the mean score of all four ratings from the target score and then dividing that value by the SD for all four ratings) related significantly to percipients’ belief of their success and their previous ostensible psi experiences. There were also moderate to strong correlations between z scores and experiencing an Altered State of Consciousness and other alterations of consciousness, but only among the Highs (Marcusson-Clavertz & Cardeña, 2011).

The current pre-registered study had a larger N with only Highs, compared in ganzfeld and hypnosis procedures. Participants ($N = 35$) underwent two sessions of 10-minute induction and 10-minute reporting each, in counterbalanced order. One session used an automated ganzfeld procedure, the other a recorded relaxing hypnosis session. The authors served as “sender” and “experimenter” in different buildings. Participants filled out the Phenomenology of Consciousness Inventory (PCI) at the beginning and end of the sessions, and gave a rating of 0-100 to 4 film clips (one of them the target), from which the psi z scores were derived.

Overall, participants did not score better than chance and there was no significant difference between hypnosis and ganzfeld. However, for the ganzfeld sessions z scores correlated significantly with the PCI Altered State shift scores (baseline – ganzfeld scores). PCI end of the session scores for attentional focus and low arousal during ganzfeld also correlated significantly with psi z

scores. Although the overall psi hit rate was not significant, a positive relation between psi scoring and experiencing an Altered State in ganzfeld was replicated, and there was also exploratory support for the noise reduction hypothesis. Obrigado to the Bial Foundation for its support.

Spiritual Experiences in Epilepsy: An Autoethnography

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This paper uses qualitative methodology to explore spiritual experiences in Temporal Lobe Epilepsy from a non-medical, non-judgemental perspective. Focus is placed on the meaning that these experiences have for the experient. Some individuals with Temporal Lobe Epilepsy may experience seizure events, otherwise known as auras. *Aura* is a specific term used in epileptology, identifying the experience and behaviour that an individual with epilepsy has just prior to the development of a full seizure. Some people experience auras as a warning sign that a seizure is imminent, although technically they are regarded as part of a seizure. These auras have a phenomenology that is described by experiencers in terms that are mystical, religious, spiritual or transpersonal in nature. They are termed here Epileptiform Events (EFEs) as a more neutral term than the usual medical labels that imply certain aetiologies and pre-determined diagnostic criteria. The nature of these EFEs is of interest in the field of parapsychology, because they share features with other exceptional experiences and occur under similar circumstances, for example as the result of an altered state of consciousness. Some experiencers describe EFEs as being transformative, possessing a noetic quality. Individuals with Temporal Lobe Epilepsy rarely discuss EFEs with their physician as they fear judgement, medicalisation, and pathologizing of their experiences.

The temporal lobe has been previously explored by parapsychologists because the descriptions that individuals with epilepsy have given of their EFEs and epilepsy-related experiences include parapsychological occurrences associated with the wider population of those without epilepsy, including: *déjà-vu*, sensed presence, out-of-body experiences, and mystical experiences. Links have been made between EFEs in Temporal Lobe Epilepsy and the activation of the temporal lobe using transcranial magnetic stimulation in non-epileptic populations resulting in a sensed presence. It has been suggested that there is a continuum of lability of the Temporal Lobe that may hold interest to parapsychology as a possible explanation of psi abilities and a potential area for the development of psi. We question the prudence of understanding these experiences in a strictly biomedical pathologizing manner. A materialist understanding of these spiritual experiences is problematized in the current study, which uses an autoethnographic narrative.

The result is to understand EFEs as a valuable ability, rather than a pathologized symptom. We conclude by suggesting that experiences of EFEs may contribute in a fundamental way to understanding the human condition. The adaptability of the autoethnographic method demonstrates that it may prove valuable for use by parapsychologists and transpersonal psychologists who are interested in researching exceptional human experiences, because it provides data that would not be accessible using other data collection and analysis methods. Recommendations for future research may include understanding how widespread these experiences are and in-depth interviews with individuals who experience EFEs, to understand similarities and differences in phenomenology and the meaning that they may have outside a strictly medical understanding.

Transformative Features of the Psychedelic Drug Experience: An Interpretative Phenomenological Analysis of Ayahuasca Users in Britain

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Psychedelic consciousness has been linked with deeper awareness into one's psyche and connection to the transpersonal (Metzner, 1998). Recently, academia has witnessed the growth of psychedelic research (Sessa, 2012). Specifically, qualitative analyses into these states, including ayahuasca. Anecdotal reports of ayahuasca include profound transformations in one's psycho-spiritual nature (Shanon, 2002). Research has also been directed towards exploring the parapsychological nature of ayahuasca experiences. Topics of interest include; out-of-body experiences, telepathy, precognition and entity encounters (Luke, 2008), to name a few. Nevertheless, the data are sparse on the phenomenology and there is a shortage of face-to-face interviews on ayahuasca users from western civilizations (Luke, 2011). The aim of the present study was to examine the phenomenological accounts of ayahuasca users from Britain. Three participants (1 male, 2 females) completed semi-structured interviews. Interpretative Phenomenological Analysis was used to interpret ayahuasca users' experiences. Research found evidence for 3 super-themes: psychotherapeutic healing, spiritual re-birth, and materialistic society anti-spiritual. Research findings promote the future exploration of the therapeutic applications of ayahuasca and their parapsychological features. Additionally, there is an opportunity to explore the psycho-social features of ayahuasca discursively.

The Star Gate Archives: Reports of the US Government Sponsored Psi Program 1972-1995: An Overview

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The year 1972 saw the beginnings of the SRI program in psi research under the stewardship of Harold Puthoff and Russell Targ. As a result of Army counterintelligence interest, what started as funding for a single research project by a government agency went on to become the largest sustained research program in the history of psi research, spanning a period of 22 years, eventually closing in 1995. Best known by its last codename Star Gate, the program was funded by a variety of executive branches, agencies, and the military and intelligence communities of the US Government, for a total of \$19,443 Millions. The program focused on the application of, and investigation into psi phenomena, both informational, that is passively gathering information (precognition and real-time remote viewing) and causal (psychokinesis), that is, interacting with the physical world by mental means alone. About 11067 documents—approximately 82518 pages—related to this formerly classified program have been declassified since 2000 and are available for review by researchers and the general public. In the professional psi literature, generally, the Star Gate program is sometimes passed off in a couple of sentences. Beginning in 2012, we started the task of putting together the SRI/SAIC research effort, which has been recently released as *The Star Gate Archives: Reports of the US Government Sponsored Psi Program –1972-1995* (McFarland). It comprises four volumes titled:

Volume 1: Remote Viewing, 1972-1984 (2017)

Volume 2: Remote Viewing, 1985-1995 (2017)

Volume 3: Psychokinesis (2017)

Volume 4: Government Memorandums and Reports (release date to be determined)

In this article, we present an overview of the Star Gate program, focusing on what has been learned from the massive exercise of looking into these archives. Needless to add, this four-volume series is *the final word* on Star Gate, as it is (1) based entirely on the complete set of documents released, including some unclassified documents not available in the government released archives, (2) prepared under the supervision of Edwin May, who joined the SRI program in 1976 and was the director of the program since late 1985, to its closure in 1995 at SAIC, (3) has the stamp of approval by Hal Puthoff and Russ Targ – the originators of the program, and some of the government remote viewers, and (4), the former Secretary of Defense, William S. Cohen has written a foreword for the series.

Open Data in Parapsychology: Introducing Open Data

Adrian Ryan

Driven by the explosion in use of the internet and world wide web, the open access movement has been gaining momentum since the early 1990s. Initially focusing on removing access restrictions to articles in scholarly journals, the concept of openness has broadened to encompass data and code. Various organizations have set out statements in support of openness in science, encouraging open access to original scientific research results and promoting a culture of openness and sharing of research data among research communities. The UK Government has stated that it is committed to ensuring that published publicly-funded research findings should be freely accessible.

The paper discusses the benefits of open data and also considers concerns that some researchers may have about the approach. Publishing strategies, copyright, and database right considerations, confidentiality, the preparation of data for publication, and the citation of datasets are discussed. The second part of the paper presents *Psi Open Data*, an open data repository for storage of parapsychological and psychical research data. This project, undertaken by the Society for Psychical Research and funded by a legacy from Nigel Buckmaster, is intended for use by the international community. The repository is constructed using DKAN, an open source open data platform with a full suite of cataloging, publishing and visualization features. It allows administrator users to upload research datasets, and any visitor to search for and download datasets. Various aspects of the repository are described: data structures, metadata, data classification and retrieval, and preview and download facilities. The initiative to bring open data to parapsychology is an evolving process. The first step is bringing the open data repository into existence. Over time the community can consider how to incorporate data publication within research and publication practices, and how to encourage researchers to make full use of the facility. In the immediate future, I would encourage researchers who agree with the aims of the initiative to contribute data to the repository. Interested researchers should email me at: adrian.ryan@greyheron1.plus.com

Panel Discussion

A Tribute to Gerd Hövelmann (1956-2017)

The Parapsychological Association recently lost one of its Board Members and former Vice-President. Gerd Hövelmann contributed to the field with many scholarly articles over a long career. His erudition will be missed as much as his human qualities. This panel discussion is an opportunity to review his contributions to the fields of parapsychology and anomalistics, and to share memories with people who did – and did not – have the opportunity to meet him.

Gerd H. Hövelmann or the “Amicus Curiae” of Parapsychology: A Personal Appreciation

Eberhard Bauer

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The untimely death of our friend and colleague Gerd H. Hövelmann on February 5 at the age of almost 61 years is a major blow to parapsychology and anomalistics, especially in Germany. It means a great loss in its international visibility, connections, and exchanges, especially when it comes to the PA community. Back in 1978, Gerd had approached the IGPP in Freiburg, Germany, as an ambitious 22-year-old student of linguistics and philosophy at the University of Marburg. Within a few years, he had developed a wide-reaching network of personal contacts, mainly by correspondences, within the international community of psychical research and parapsychology, which included not only well-known researchers like Hans Bender, John Beloff, Rhea White, and many others, but also persons like James Randi and Paul Kurtz. Given the never-ending controversy connected with claims of the paranormal, Gerd adopted quite early on the pragmatic attitude of an “*amicus curiae*”, very much influenced by his great model, the American sociologist Marcello Truzzi. For Gerd, parapsychological data were primarily an intellectual and methodological challenge, not so much an ideological one. In my presentation, I will try to describe the different facets of Gerd’s position.

Gerd H. Hövelmann: Some Personal Recollections

Peter Mulacz

Sigmund Freud University, Vienna, Austria

My first (then only literary, not personal) contact with Gerd Hövelmann dates back to 1976 when he, in a book review, praised the chapter I had authored, but criticized one aspect (on Popperian philosophy) in rather derogatory terms. Now, in hindsight since he has passed away, I regret that we never discussed that issue face to face. For many years, we met irregularly on various congresses, (e.g., the PA conventions) yet without much contact with one another. It was only during the past decade that this changed and eventually we became good friends. Still there were items on which we had different opinions – be it Piet Hein Hoeben’s Tenhaeff-bashing, be it the positioning of parapsychology vis-à-vis “anomalistics” – yet we had arrived at a very friendly way of agreeing

that we disagreed on these points. I was very impressed by the historical research Gerd carried out within the field, particularly on Max Dessoir, the stunning details he found out, and I hope that this material will be published in its entirety. Continuing on the issue of historical matters in parapsychology, Gerd asked me for permission to reprint two book reviews (on von Schrenck-Notzing) that I had published in the Newsletter of the Austrian Society for Parapsychology, in the *Zeitschrift für Anomalistik*, the journal of which he was the chief editor. Later I submitted to that journal an article on “burnt-in” hands, a rare and possibly paranormal phenomenon occurring only within catholic Christian believers; Gerd replied that he had been longing for an article on this very specific phenomenon for years. He accepted my draft eagerly but wanted me to expand my article. He gave me some suggestions for analogous cases in literature or poetry to dig out, but I did not find the time, which is the reason that this article regrettably was not published during his life time. Lately we had another interaction when our Berlin colleague Wilfried Kugel wrote an article on the “Vienna Circle” – actually a review of a book on it published on the 650th anniversary of the University of Vienna, and the accompanying exhibition on the “Vienna Circle” – so I decided to write a few amendments on that topic. Co-operation with Gerd on articles to be published in “his” journal always went very smoothly. Besides his erudition as a scholar Gerd displayed a good sense of humor.

From Responsible Skepticism to Reflexive Anomalistics: A Selection of Quotes from Gerd Hövelmann

Renaud Evrard

University of Lorraine, Nancy, France

I never had the opportunity to meet the well-known sociologist Marcello Truzzi, but Gerd Hövelmann was the one who best enabled me to understand the importance of his approach. Are skeptics and parapsychologists really in competition, or can we be both at once? In this talk, I will select quotations from the epistemological works of Gerd Hövelmann in order to generate comments. From his stimulating paper “Seven recommendations for the future practice of parapsychology” (1983) in Truzzi’s *Zetetic Scholar* to the newly published *Legitimacy of Unbelief* (Collected Papers of Dutch skeptic Piet Hein Hoebens), through to his contributions of “Escape from Wonderland” (2009), “Manifesto for a reflexive UFO-research” (2013, with Anton & Schetsche), to the German *Handbook of scientific anomalistics* (2015), I will try to specify what epistemological attitude Gerd Hövelmann tried to promote in order to prepare the future of parapsychology and anomalistics.

Posters

An Interpretative Phenomenological Analysis of After-Death Communication in the Bereavement Process of Professed Sceptics

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A heightened interest in research concerning after-death communication (ADC) has been recorded in recent years, which could be attributed to an increased recognition of the continuing bonds model of bereavement proposed by Klass, Silverman, and Nickman (1996). Research to date has shown that ADC is in fact, a widespread phenomenon (Klugman, 2006; Rees, 1971; Sanger, 2009). Such research has depicted a large spectrum of outcomes of ADCs in the bereavement process. These include providing comfort and reassurance to the bereaved that the deceased has not abandoned them (Daggett, 2005; Parker, 2005; Rees, 1971), improving the relationship with the deceased (Beischel et al., 2015; Drewry, 2003), promoting spiritual growth (Cooper, 2016a; Wright et al, 2014), and positive emotional drives (Cooper, 2016b). However, there is a lack of representation in previous literature of individuals that were sceptical of ADC and an afterlife before their experiences. It is possible that because of a conflict between ADC and their belief systems, ADC would have a more challenging impact on the bereavement process.

This paper/poster presents the findings of an interpretative phenomenological exploration of these issues. The research questions of interest were: (a) how sceptics interpret ADCs; (b) the meaning they attribute to them; and (c) their impact on the grieving process. Semi-structured interviews were conducted with 6 female students at the University of Northampton, between the ages of 19 and 35. These were conducted in a quiet room on the university campus with each interview lasting no more than an hour. Interpretative phenomenological analysis resulted in the identification of 5 super-ordinate themes: (1) *experiencing ADC through a sceptical lens*; (2) *changes in belief systems*; (3) *the influence of ADC in bereavement*; (4) *a new way of living*; (5) *resolving complicated relationships with the deceased*.

In summary, an inability to find conventional explanations for the ADC influenced participants to see it as evidence of an afterlife, while maintaining *some* level of scepticism. Furthermore, experiencing ADC challenged their sceptical beliefs and in doing so, promoted an exploration of spirituality. Participants discussed becoming more open to spiritual beliefs and phenomena, as well as having a more positive view of death after interpreting ADC as reassurance that death is a gateway to another level of existence. Their experience also shaped a new view of the afterlife, which was seen as a realm of happiness and peace, and had a similar effect of decreasing death anxiety. In terms of how the ADC impacted on their bereavement process, comfort was taken from continuing bonds in offering support in times of need and knowing the deceased was at peace. ADC also helped in the acknowledgement of death and moving forward in life. However, while all participants reflected on the positive effects of ADC, some also conceptualised the experience as a reminder of the loss they had suffered, which is a lesser explored aspect of ADC literature and warrants further research. In making sense of ADC experiences, sceptics tried to reach a common ground between two contradictory belief systems. While maintaining some of their previous views, the participants' developed a new view of spirituality, an afterlife, and death, which decreased their death anxiety and supported them in their grieving process. Most importantly, despite the experience being conflictual to their beliefs, participants found it helpful in reaching a healthy grief outcome and decreasing distress about their loss. The findings may be useful to practitioners in the field of bereavement by providing an insight into the complex dynamics of ADC and different belief systems.

Spontaneous Post-Death Phenomena and their Positive Impact on Experiencers

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Following the death of a loved one, people may report unusual experiences that they interpret as evidence of the continuing existence of the deceased in some form. Such experiences can include: a *sense of presence* of the dead (Steffen & Coyle, 2011); dreaming of the dead (Barrett, 1991-92); visual, auditory, and tactile apparitions; electrical disturbances; and movements of objects/psychokinetic phenomena (Cooper, Roe, & Mitchell, 2015). Spontaneous anomalous experiences are widely experienced by the bereaved, with up to 60% of those who suffer a loss reporting them (Castelnovo et al., 2015). The potential therapeutic role of such experiences in bereavement achieved some prominence when Rees (1971) focused on the sense of presence in his *British Medical Journal* paper. Given their frequency, it is important to ask what impact these phenomena have on the experiencers. Although mental health professionals have concerns that such experiences might be associated with pathology, and media portrayals suggest that they are likely to be scary or harmful to experiencers, research has found that they can bring comfort and therapeutic gain to the majority of those who experience them (Cooper, 2016; Krippner, 2006).

This study intended to explore these experiences in much greater depth, focusing on how they might engender hope (Snyder, 1994), as suggested by several previous researchers (e.g., Devers, 1997; Drewry, 2003; Guggenheim & Guggenheim, 1995). Using a mixed-method approach, a questionnaire battery was designed and distributed, including measures of personal beliefs and a hope scale (Nowotny, 1989) to 50 people who *did* report anomalous experiences during bereavement (experiencers), and 50 who *did not* (control). Additionally, short answer questions were provided and a free response section for participants to write about their experiences (experiential group). Following this, in-depth semi-structured interviews were conducted with selected experiencers based on their hope scores ($n = 9$). In brief, quantitative findings demonstrated a significant difference in levels of hope between the bereaved who *did* report such experiences and those who *did not* ($p = .04$, t). Although hope decreased for the experiencers, this drop was not significant ($p = .125$), and a significant drop in hope was found for those who *did not* report such experiences ($p = .008$). This was also reflected in qualitative feedback from the short answer questions, where a significant shift was found in negative states of mind following loss to positive states of mind following the first reported anomalous experiences ($p < .001$). Qualitative findings produced several themes from the results of a thematic analysis on written accounts of experiences, and an interpretative phenomenological analysis of interview feedback. Continued bonds with the deceased were expressed, personal beliefs being challenged by the experiences, therapeutic gains and coping with grief, and aspects of hope, among others. Post-death experiences were reported by a wide variety of people, regardless of personal and religious beliefs in anomalous phenomena. Where experiences contradicted beliefs, personal transitions of outlook on life were expressed. Anomalous experiences during bereavement present a natural aid to coping and recovery, facilitating the gap after a loss. The findings of this and related studies within clinical parapsychology must be understood and integrated into the work of relevant therapists and professionals – especially within thanatology, palliative care, and bereavement counselling – to support the bereaved with their exceptional encounters. This study was supported by the Society for Psychical Research and the Alex Tanous Foundation.

A Pilot Study of Floatation Tanks and Sensory Isolation in Producing Psi Conducive Imagery

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The late John Lilly (1972, 1977) began employing floatation techniques in isolated environments in the 1950s, at the National Institute of Mental Health. This technique in more recent times has become known as Restricted Environmental Stimulation Therapy, or REST for short (Suedfeld et al. 1990). Floatation – or REST – involves lying in water (usually naked) in a purpose-built tank that is filtered and regulated to body temperature. The individual is immersed in complete darkness, with Epsom salt diluted into the water to allow any person to float without effort. A single session normally lasts for about one hour of continual exposure to this environment. The use of this method has been found to have a number of psychotherapeutic benefits, including enhanced personal creativity, an enhanced sense of well-being, meditative qualities, decreased stress and anxiety, and improved physiological ailments – to name but a few (Bood et al., 2005; Kjellgren, Lyden, & Norlander, 2008). However, due to the types of imagery that people experience in the tanks (Lilly & Gold, 2001), Lilly encouraged parapsychologists to use this technique in much the same way as the ganzfeld to induce psi. His thoughts on this matter were expressed during his guest speech at the dinner of the 1969 Parapsychological Association Annual Convention, held in New York City (Lilly, 1969). It appears that few acted on Lilly's suggestion in employing floatation tanks, with some of the main reasons being the cost of the tanks and the time and effort it takes to maintain them (Schwartz, 2015, 5th September – *personal communication*). Even so, Rogo (1980) attempted a pilot study using the tanks following a similar protocol as the ganzfeld studies of the time; an agent trying to send an image they were viewing to a person floating in the tank. Although Rogo's study did not produce findings suggestive of psi taking place, it did produce several methodological concerns regarding the use of the tanks (e.g., participants not having had experience in floatation tanks before taking part, and tank maintenance), which explains perhaps why no further studies employing the tanks were published within parapsychology.

This present study aims to: (a) revisit the single pilot study that was conducted (Rogo, 1980) while adding more rigorous and advanced methods, and (b) act on Lilly's (1969) recommendations, and those of Tart (1975; 2015 3rd September – *personal communication*; also see Roe, 2009), to provide a fair evaluation of the use of the floatation tank method in facilitating a psi-conducive state. This pilot study employs the experimenters as sole participants, in order to examine the methods used and explore potential ethical considerations in greater depth before recruiting participants to engage in floatation sessions.

In this initial run, the sender (Saunders) begins watching a randomly selected clip from the Dalton series, a collection of 100 different video clips, each a minute in length, carefully sourced from cartoons, films, and television shows. These videos are divided into 25 groups of four, organised to be distinct from one another in the content and emotionality of the clip. This pool was originally developed for autoganzfeld research at the University of Edinburgh and has been utilised in a range of ESP research studies (e.g., Dalton, Steinkamp, & Sherwood, 1999; Dalton et al., 2000; Saunders, 2014; Sherwood, Dalton, Steinkamp, & Watt, 2001). While the clip is being watched, the receiver (Cooper) attempts to perceive the content of the clip through imagery witnessed while engaged in a floatation session. All of the receiver's impressions are written down following a

floatation session and sealed in an envelope to be scored by an independent judge against the target pool watched by the sender. A total of 10-12 sessions are to be completed within this first study. This presentation reports on the initial aims and structure of the study, currently in progress.

Medical Diagnosis and Death Detection: A Replication of Reading Faces through Photographs

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A replication of two previous experiments by Parra and Argibay (2013) was performed in this study with ordinary people (i. e., non-psychics) using photographs of the faces of people. The aim was to use images of dead and diseased people as targets, specifically to determine if the participants scored above mean chance expectation (MCE) with the two kinds of stimuli. Fifty participants, with experiences of ESP in general, took part. In the first experiment, using photographs of healthy and diseased persons, there was support for the claim that iconic representation through a mental procedure (psychometry) – implying mental representation of the person target – is psi conducive. A significant difference on the two person targets was found, as well as for the total scores for the healthy/disease condition. Although there was no significant result under the living/dead condition, in the second experiment, males scored significantly higher than females. This result corroborates the Parra and Argibay (2009) findings in terms of the gender difference, where males scored higher as well. A few participants pointed out that there were different symbolizations for the dead target persons.

How do RNGs Detect Psychokinesis? The Proposed CAW Model (Coupling, Analog Signal Anomaly, and Wave-like Field Model) as a Mechanism for Detecting PK

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The author has been carrying out a 3-year measurement at a fixed place using field RNGs (Orion), in which he has found a characteristic curve of field consciousness. This finding suggests a possibility that Z and Converted Z (calculated from the accumulation of (Z^2-1) per second) are connected by a linear equation. This phenomenon requires quantitative discussion of the physical mechanisms of PK. In the present study, the author develops a theoretical model to explain how RNGs detect psychokinesis, based on a direct influence hypothesis. Patterns of anomalous outputs of RNGs affected by PK can be categorized into three types: (A) output signals are clock signals such as 1, 0, 1, 0, 1, 0, ...; (B) output signals consist of 0 only; and (C) output signals consist of 1 only. The author proposes that PK influences the analog circuit in a RNG directly. At first, original analog signals are generated by an analog circuit. The analog signals are converted to original digital signals. Next, the original signals are processed by XOR using a reference clock signal,

and then RNGs output them as random numbers. The author proposes ideas for possible physical mechanisms through considerations of previous studies on poltergeists, macro PK, and ki. Type (A) pattern can be explained by an analog signal anomaly caused by PK. For the type (B) pattern, the original signals should be synchronized to the reference clock signal. The author introduced an idea, an electric coupling as a mechanism that can cause synchronization between the analog and reference signals naturally. For the type (C) pattern, the original signals should be clock signals with a reverse phase of the reference clock signal. The author introduced another idea, a wave-like field as a mechanism that causes synchronization with a reverse phase.

Anomalous outputs of RNGs can be explained using the CAW model in which the PK field is assumed to have the properties of an electric coupling, an analog signal anomaly, and a wave-like field. Based on the CAW model, persons can cause an anomaly of outputs of RNGs relatively easily even if they do not know the details of the RNG circuits. Also, it is expected that persons can control outputs of RNGs by their PK if they change the way of generating PK, just as they are able to changes the pitch or loudness of their voice. The probabilities of types (A), (B), and (C) patterns are defined as α , β , and γ ($1 \geq \alpha + \beta + \gamma \geq 0$). For them, lengths of bits per second are defined as m_A , m_B , and m_C . The author derives equations of MCE Z-scores; Z (Stouffer's Z), and Z^2 , Z^3 , Z^4 , Z^5 , and Z^6 per second for a typical condition that random numbers are generated at 200 bits/s. These equations can be applied for discussions of all RNG experiments.

What About Parapsychology and Anomalistics? Results of a WGPF and GfA Member Survey

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Harvey Irwin published in 2014 the results of an online survey of members of the Parapsychological Association concerning the views of parapsychologists about paranormal phenomena and parapsychological research. The current study is a conceptual replication with a German version of the questionnaire partly adapted to the special demands of the two particular survey groups, members of the Wissenschaftliche Gesellschaft zur Förderung der Parapsychologie (WGFP) [Scientific Society for the Advancement of Parapsychology] and the Gesellschaft für Anomalistik (GfA) [Society for Anomalistics].

The PA, established as an international academic professional association of parapsychologists, has relatively high entrance barriers for membership aspirants. The entrance barriers of the WGFP (established in 1981) are similarly high as well as the degree of scientific professionalism. The situation is different with the GfA. Its foundation in 1999 did not pursue the objective of an exclusive professional association, but a platform for "an informed and respectful dialogue between proponents and opponents of controversial scientific claims and seemingly incompatible epistemic positions". Everybody who likes to support this objective can become a member. Accordingly, the proportion of professional scientists is much lower than in the WGFP and PA.

Another significant difference consists in a greater heterogeneity of the main areas of interest because the focus of the GfA is not limited to the field of classical parapsychology but covers also topics such as ufology, cryptozoology, astrology, etc. Although members of the WGFP and PA

have a positive attitude towards parapsychology as an open-ended scientific project, and consider unconventional theories and explanations (i.e., consider the existence of psi possible), this is not necessarily the case with the members of the GfA. Although a strong interest in anomalistic issues can be assumed, the mere fact of the foundation by former members of the GWUP suggests that non-open-ended approaches such as the so-called anomalistic psychology get their place.

Twenty-five WGFP members and 57 GfA members took part in the survey. The results are compared between the groups as well as with the data of the survey conducted by Irwin. Despite many parallels, some remarkable differences were found. The items concerning the evidence for the reality of psi, together with its specific facets, brought interesting results. With regard to the general assessment, the average of the GfA sample is lower (73%) than the WGFP (84%) and PA (79%) sample because some GfA respondents were extremely critical about the evidence. However, with regard to the indications of the assessment of evidence for specific facets of psi (clairvoyance, telepathy, precognition, psychokinesis), the WGFP respondents were slightly more critical on average than the respondents of GfA. Overall, this specific experimental evidence was much more conservatively assessed by the German groups than the (international, with a majority of American members) PA respondents. A salient difference between the PA sample and the two German samples concerns the survival hypothesis. The percentage of those disagreeing to the statement *After the physical body dies some part of the person survives* was much lower in the PA sample (14%) than in the GfA (36.4%) and WGFP (44%) ones. In general, it became apparent that parapsychologists and interested persons in anomalistics do not form a homogenous group with regard to the assessment of the evidence and the opinions on research-specific issues. Thus, they are not credulous “sheeps” who adopt, without thinking, every paranormal claim or evidence, but rather a group of individuals whose assessments often demonstrate a high degree of variance.

Therapeutic Approaches towards Integrating Near-Death Experiences

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This poster exhibits a current study underway on the topic of how and why some near-death experiences (NDEs) are not successfully integrated by experiencers. An NDE is often a powerful and subjectively anomalous event that can permanently alter an individual's beliefs, values, and the way in which he or she engages, operates, and moves within the world. As with any experience, it is one that needs to be integrated into the experiencers' self-narrative or personal story for the individual to psychologically adjust and make sense of his/her experience. Individuals report both positive and negative NDEs. Typically, positive NDEs are integrated easily into the experiencer's personal narrative and s/he is able to adjust mentally, emotionally, spiritually, and socially; however, there are some individuals, despite experiencing a positive NDE, who struggle to make sense of and adapt to it. Additionally, negative NDEs are commonly correlated with negative adjustment. This demographic of NDErs who may struggle to integrate their NDEs may experience anxiety or PTSD-like symptoms related to terrifying features of their NDEs (e.g., bleak or even hellish dimensions), have trouble reconciling prior spiritual views with what they experienced during their NDE, and may be unable to relate to their friends/family due to existential or spiritual shifts that often occur after an NDE. Friends and family may also have a difficult time relating to the NDEr and accepting these changes. This research study first utilizes questionnaires to elucidate themes of

poor integration of NDEs, and to begin to elicit how/why it manifests. One questionnaire will be oriented to NDErs themselves and another to close friends and family. Second, eight NDErs and a close friend or family member of each NDEr will be chosen to participate in interviews/case studies that will be analyzed using interpretative phenomenological analysis (IPA). IPA in this instance will be used to carefully examine the long-term negative after-effects experienced by people who have NDEs, identify what exactly those negative after-effects are, and what factors impede the integration process. This research is undertaken with the goal to elucidate clinical and therapeutic applications counsellors and psychotherapists may use when working with clients struggling to integrate NDEs. Thank you to the Parapsychological Association for funding this research through the PARE Grant.

Exploring the Parapsychological and Transpersonal Dimensions of the Psychedelic Drug Experience? A Mixed-Methods Analysis

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Many scholars have argued for more research to be carried out on the noetic elements of the ayahuasca experience (Kjellgren, Eriksson, & Norlander, 2009; Trichter, Klimo, & Krippner, 2009). Móró, Simon, Bárd, and Rácz (2011) believe that hallucinogenic drugs offer powerful spiritual transformations for users. Ayahuasca (*yagé*) is a plant hallucinogen traditionally consumed in tribal communities across South America. Pharmacologically, the plant medicine is typically brewed by combining *Banisteriopsis Caapi* (which contains alkaloids, harmine, harmaline and tetrahydroharmine) and *Psychotria Viridis* (N, N-dimethyltryptamine) (Barbosa, Giglio, & Dalgarno, 2005).

Ayahuasca experiences are similar to those reported by individuals who experience parapsychological/anomalous phenomena, such as precognition and telepathy, as well as psychokinesis (Luke, 2010). Ayahuasca experiences are also linked to other purported psi phenomena such as mediumship. Anthropologist Kensinger (1973) reported on a Peruvian ayahuasca retreat where the ayahuasquero gave the researcher specific information on his deceased grandfather. This was an example of mediumship demonstrated in an environment where ayahuasca was consumed. Ayahuasca was referred to by many parapsychologists as “telepathine” for its alleged capability to allow users to read the minds of others in close proximity (Luke, 2011). In addition to telepathy, ayahuasca users report clairvoyance (both auditory and visual), precognition, and a small section have reported being abducted by alien entities (Nelson, 2008). It is evident that psychedelic drugs have great research potential, with potential applications for advancing theory in transpersonal psychology, parapsychology, and clinical psychology. This is evident because research has indicated that hallucinogenic drug experiences are linked to a range of transpersonal, therapeutic and parapsychological phenomena (Luke, 2010; Lukoff, Zanger, & Lu, 1990; Thomas et al., 2013). Nevertheless, recent research into these links is in its infancy. From 1960-2000 psychedelic research was banned by governments globally. Now, however, after a loosening of political rigidity, researchers in the field are once again beginning to explore these links with psychedelics and its ties with these fields.

However, as Luke (2011) suggests, there is a shortage of qualitative data in this field. More

so, there is a lack of qualitative data on ayahuasca users' experiences from Western culture (seeking authentic experiences outside of the West). Thus, the aim of this project is to collect both quantitative and qualitative data on hallucinogenic drug users, with a focus on ayahuasca users in Britain, as this does appear to be an area in need of further empirical investigation. This project is an extension of a master's thesis that explored ayahuasca users' motivations; the data were analysed using interpretative phenomenological analysis. Similarly, this project will focus on analysing qualitative data, however, the research team aims to include wider systematic analyses for the data. Data will be collected via one-to-one semi-structured/unstructured interviews both in person and through online social communication formats. We anticipate that we will develop a greater understanding of ayahuasca experiences within the wider systemic/postmodern world. Also, we believe that this project will build on prior transpersonal psychological and parapsychological theories on psychedelic drug use. The data collected will provide further evidence for the notion that psychedelic research requires a multidisciplinary approach, and provide evidence that each individual psychedelic "trip" is qualitatively different than another.

Individual Difference Correlates of Psi Performance in Forced-Choice Precognition Experiments: A Meta-Analysis (1945-2016)

Marco Zdrenka and Marc S. Wilson

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Previous research in parapsychology has not been particularly persuasive, in large part due to what many *assume to be* a lack of replication (Alcock, 2003; Hyman 2010; Galak, LeBoeuf, Nelson, & Simmons, 2012). To address these concerns and better understand which factors may be associated with stronger and more consistent effect sizes, all forced-choice precognition experiments analysing individual differences (e.g., personality traits) were aggregated to determine which factors might reliably predict psi performance. Overall, 56 studies published between 1945 and 2016, including 35 individual difference measures, were subject to meta-analysis.

A small but significant relationship was found between the following individual difference measures and psi performance: luck belief or the belief that luck is primarily controllable ($r = .131$), belief in psi ($r = .125$), perceptual defensiveness ($r = .125$), openness to experience ($r = .124$), extraversion ($r = .080$), and time belief as dynamic ($r = -.017$). However, with the number of meta-analyses conducted in this paper, there is an increased risk of family-wise error, so one or more of these significant findings may be the result of multiple analyses (e.g., represent a false positive). Retrospective meta-analyses also have several limitations, so it is not appropriate to make any definitive statements about the results without first conducting confirmatory studies. For example, retrospective meta-analyses are often affected by publication bias or the file-drawer effect, whereby only significant results are reported or published. Although parapsychological journals generally publish more non-significant results than most mainstream scientific journals (Mousseau, 2003), no field is entirely immune, especially when there may be tens or even hundreds of secondary analyses conducted (e.g., analyses of various individual difference measures). At the same time, there is no indication to argue strongly that publication bias is a problem when taking into account Egger's test results—all of which were non-significant—which should be reassuring for parapsychologists given Mousseau's (2003) findings.

Ultimately, we hope that this meta-analysis can be used as a springboard for future research, allowing the findings to be used in a productive way and perhaps aiding in the development of research programmes that are specific and structured. As Watt (2005) comments, “Parapsychologists need to be far more systematic in how they tackle these questions.... Systematic follow-up is an essential prerequisite for demonstrating a replicable effect” (p. 222). Given the particularly straightforward nature of forced-choice precognition experiments, a promising future avenue would be to explore these factors in confirmatory studies. We hope that researchers can model their future experiments off these findings in conjunction with preregistration techniques, to ultimately create a more systematic and robust database.

Presidential Address

Withering Skepticism: Inclusive Criticism, or Hackneyed Mantras and Extraordinary Standards?

Chris A. Roe

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In his influential article “Rhetoric over substance: The impoverished state of skepticism”, Charles Honorton (1993) provided an astute and damning response to critiques of parapsychology produced by the principal counter-advocates of the day, James Alcock, Ray Hyman, and James Randi, for a special issue of the Italian Skeptics’ journal, *Scienza & Paranormale*. Rather than take issue with particular points these commentators had made, Honorton took a more holistic perspective that focused on the rhetorical strategies they had adopted, comparing them with previous objections to parapsychology so as to see how (or indeed if) those arguments had moved on to keep pace with developments in empirical work. This usefully allowed him to identify ways in which the skeptical position had shifted; for example, in no longer claiming that the results of the major lines of experimental psi research could be explained in terms of the null hypothesis. “This concession is important”, he noted (p. 191), “because it shifts the focus of the debate from the *existence* of effects to their *interpretation*” (emphasis in the original). He also drew attention to the exceptional situation in parapsychology in which most counter-advocates were not empirical researchers engaged in psi research, so that their counter-explanations tended to be evaluated on the basis of plausibility rather than on the basis of evidence derived from direct empirical tests. According to Honorton, this produced a cycle of criticism in response to new claims that begins with *statistical criticisms* intended to demonstrate that the claimed effects are not really significant, *methodological criticisms* that are intended to account for observed effects in terms of procedural flaws, and finally *speculative criticisms* based on a priori and *ad hominem* arguments. Ironically, in showing how this cycle could be applied to both the ESP card guessing studies of the 1930s to 1950s and also to the ganzfeld studies of the 1970s and 1980s, Honorton was able to demonstrate a stagnation in parapsychological criticism akin to the “lack of cumulativeness” that has been regarded by counter-advocates as a principal weakness in the case for parapsychology.

It is now 25 years since Charles Honorton’s untimely death, and in marking that anniversary it seems appropriate to review modern criticism of parapsychology to see to what extent his characterisation of skepticism still holds true. During this period, parapsychology has witnessed quite a dramatic transformation in its preferred methodologies and the particular expressions of psi they elicit, and has benefited from the availability of more standardised approaches to making sense of

accumulated evidence, such that one might expect to see similar advances in the nature and focus of skepticism. In testing this expectation I shall draw on a number of sources, but will rely especially on Krippner and Friedman's (2010) *Debating Psychic Experience*, Cardeña, Palmer, and Marcusson-Clavertz's (2015) *Parapsychology: A Handbook for the 21st Century*, and the controversy surrounding Bem's "Feeling the future" publications.

Invited Address (J. B. Rhine Banquet Address)

Invisible World and Modern Astrophysics

Efstratios Theodosiou

President of the Hellenic Physicists Society, Greece

The problem of the co-existence with the so-called “visible world” of a non-visible one, inconceivable to human senses, was a point of disagreement and dispute between theology, philosophy, and the exact sciences. The evolution of this view from Pre-Socratic philosophers to Modern Astrophysics is discussed. Arguments that are important for theologians in order to follow the achievements of modern science are also given. This is particularly important for Antiretic-Objectionable Theology making an effort to refute the metaphysical views of Christian theology through ideas mainly based on the findings of the exact sciences.

Exhibitions and Live Performance

Pythia: An Ancient Musical Instrument Exhibition and Live Performance

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A rare ancient music instrument exhibition and live performance was held during the Presidential Reception in the Hypatia Mansion titled “Pythia,” after the artistic competition that took place during ancient times at Delphi. Both the exhibition and the live performance revolved around the Greek god Pan, the one who – according to ancient Greek mythology - invented the art of pre-cognition and taught it to Apollo, who then passed it over to the oracle Pythia.

During the first part of the live performance, the attendees heard Delphic and Homeric hymns with recitation and accompanied by ancient lyre and kitharis. During the second part, modern and well-known musical pieces were played, adapted for ancient music instruments. At the same time, a small exhibition was held where the attendees could see, touch, and play with the lyre of Pan, the lyre of Apollo, the barbiton lyre of Sappho, the mysterious instrument of sambuca, the phorminx, the Kitharis of the Golden Age, and other instruments.

The Greek History of Psychical Research: A Photo Exhibition

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A photo exhibition about the history of Greek parapsychology, the Greek Society for Psychical Research (GSPR), the legendary figure of Dr. Angelos Tanagras, and the “telepathic network” between Athens, Vienna, London, Paris, Warsaw, and New York, was available for viewing throughout the PA convention. The goal was to present the Greece of the early 20th century when psychical research was widely accepted, Greek mediums were part of police investigations, parapsychology lectures were given at the National University of Athens, and field research was taking place all over the country. Furthermore, photographs from the very first international conferences in the field were displayed, from the 3rd Conference in Paris (1927), the 4th Conference in Athens (1930), and the 5th Conference in Oslo (1935). The exhibition included rare photographs, sketches, news clips and authentic documents from the Tanagras’ Archives in the Garrett Library of the Parapsychology Foundation, Greek newspapers, the GSPR’s monthly magazine *Psychic Researches* (ελλ. Ψυχικοί Έρευναί), and Tanagras’s literary publications.

PA Presidential Address 2017: Withering Skepticism

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Abstract: In this address I consider the objections to parapsychology offered by high profile representatives of the skeptical community in their contributions to Krippner and Friedman's (2010) book, *Debating psychic experience*, comparing them with previous critical commentary published in 1993 as part of a special issue of *Scienza & Paranormale* devoted to parapsychology. Many of the claims made in that earlier collection had already been challenged by Charles Honorton in his classic paper, "Rhetoric over substance: The impoverished state of skepticism", and I revisit some of those arguments to gauge the extent to which skepticism has responded to them. I find that despite the passage of 25 years and the concomitant advances in the approaches, methods, and accumulated data of parapsychology, skepticism shows little evidence of progress and in fact may have regressed to more rudimentary rhetorical practices that rely on vague aspersions and show very little familiarity with actual activities and findings of contemporary parapsychology.

Keywords: skepticism, rhetoric, replication, parapsychology

Charles (Chuck) Honorton died on November 4 1992, aged only 46, as a consequence of the congenital disease osteogenesis imperfecta. Despite his premature demise, Chuck was arguably the most influential parapsychologist of the second half of the 20th century. He was a major contributor to two of the most fruitful lines of research into ESP — ganzfeld stimulation and dream states — and was a great driver of methodological innovation, refinement, and automation, particularly as a means of improving research quality. But perhaps his main contribution was in setting a standard for how to engage with skeptics. Where he regarded their criticisms or counter-explanations as frivolous or wilfully misrepresentative — as he found in the scenarios proposed by Mark Hansel (1966, 1989) to account for outcomes in a set of classic parapsychological studies — his criticism was suitably scathing, but where he felt that such interactions could be constructive — such as in his initial debate with Ray Hyman concerning the early ganzfeld work — he was a willing and respectful adversary (cf. Honorton, 1985). Perhaps the most notable consequence of the latter was the joint communiqué he co-wrote with Hyman in which they agreed:

There is an overall significant effect in this data base that cannot reasonably be explained by selective reporting or multiple analysis. We continue to differ over the degree to which the effect constitutes evidence for psi, but we agree that the final verdict awaits the outcome of future experiments conducted by a broader range of investigators and according to more stringent standards. (Hyman & Honorton, 1986, p. 351)

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They outlined what those more stringent standards should be, and Honorton himself took up the challenge of producing a gold standard protocol that addressed the various methodological concerns that Hyman had raised; if the significant hit rates were still observed then it would cast doubt on the likelihood that these “flaws” could explain earlier successes, illustrating how criticism could be constructive in specifying the conditions under which the case for psi would be more compelling.

Shortly before he died, Chuck was invited by the Italian Skeptics’ Society CICAP to contribute to a special issue of their journal *Scienza & Paranormale* that would be devoted to parapsychology. They had three position papers from parapsychologists Richard Broughton, Bob Morris, and John Palmer for which Susan Blackmore would provide a response, and three critiques of parapsychology from James Alcock, Ray Hyman, and James Randi, on which Honorton would provide a commentary. In his contribution, “Rhetoric over substance: The impoverished state of skepticism”, he provided an astute and damning rejoinder to the criticisms offered by the principal counter-advocates of the day. Rather than take issue with particular points these commentators had made, he took a more holistic perspective that focused on the rhetorical strategies they had adopted, comparing them with previous objections to parapsychology so as to see how (or indeed if) those arguments had moved on to keep pace with developments in empirical work. This usefully allowed him to identify ways in which the skeptical position had shifted, and drew attention to what they no longer said. For example, the CICAP papers did not claim that the results of the major lines of experimental psi research could be explained in terms of the null hypothesis. “This concession is important”, he noted (p. 191; all page references are to the reproduction in Rao, 1994), “because it shifts the focus of the debate from the *existence* of effects to their *interpretation*” (emphasis in original). And similarly, “they no longer claim to have demonstrated a relationship between methodological flaws and study outcomes”, so restricting the range of legitimate counter explanations.

Chuck also reflected on the exceptional situation in parapsychology in which most counter-advocates were not empirical researchers engaged in psi research, so that their counter-explanations tended to be evaluated on the basis of *plausibility* rather than on the basis of *evidence derived from direct empirical tests*. He wrote,

Controversies in science normally occur between groups of researchers who formulate hypotheses, develop research methods, and collect empirical data to test their hypotheses. When disputes arise over the interpretation of experimental findings, or when critics suspect the findings were caused by artifacts, they design new experiments to test alternative explanations or the impact of suspected artifacts. It is through this process that scientific controversies are resolved. In contrast, the psi controversy is largely characterized by disputes between a group of researchers, the parapsychologists, and a group of critics who do not do experimental research to test psi claims or the viability of their counterhypotheses. Psi critics argue the plausibility of various alternative hypotheses (or the implausibility of the psi hypothesis) but they rarely feel obliged to test them.

According to Honorton, this lack of empirical engagement has produced a cycle of criticism in response to new claims that begins with *statistical criticisms* intended to demonstrate that the claimed effects are not really significant, *methodological criticisms* that are intended to account for observed effects in terms of procedural flaws, and finally *speculative criticisms* based on a priori and ad hominem arguments. Ironically, in showing how this cycle could be applied to both the

ESP card guessing studies of the 1930s to 1950s and also to the ganzfeld studies of the 1970s and 1980s, Honorton was able to demonstrate a stagnation in parapsychological criticism very similar to the “lack of cumulativeness” that has been regarded by counter-advocates as a principal weakness in the case for parapsychology.

The claim that parapsychology is not progressive is epitomised in a weary mantra that forms part of the skeptic’s standard-issue armoury. Honorton (p. 192) describes it thus, “at the core of the critics’ current arguments is the rhetoric that 100 years of research has failed to provide convincing evidence for parapsychological phenomena”. The refutation of this assertion lies in the data, and Honorton cites the ganzfeld paradigm as providing evidence of cumulativeness, particularly drawing attention to the effects of the joint communiqué on the subsequent standard protocol, and the negligible effect this increased methodological rigour has had on study outcomes. But fundamentally Honorton sees the 100 years mantra as a rhetorical device, reflecting a double standard when judging parapsychology against orthodox research because the implication is that other areas with similar resources have made tremendous advances. He notes, “If we were to apply the ‘century of failure’ arguments of Hyman and Alcock to academic psychology, we might well conclude that psychology has failed in its mission: after a hundred years of relatively well funded research, vigorous controversies continue over such basic phenomena as memory, learning, and perception” (p 193). Although I think that Honorton’s objection is still valid today (cf. Kelly, Kelly, Crabtree, Gauld, Grosso, & Greyson, 2006), I have cause to return to both the use of this mantra and the strategy of applying a double standard later in this paper.

I sense that as he worked through these critical reviews Honorton grew increasingly disgruntled at skeptics’ reluctance to engage with the nitty gritty of actual outcomes from actual experiments, perhaps because they could uncover the kind of thorny anomaly that would pose a real challenge to conventional explanation. Instead, Honorton found that they preferred to “offer a caricature of the history of parapsychology and present polemical arguments designed to convince us that there is really nothing in parapsychology that warrants scientific interest” (p. 192).

Modern Skepticism

It is now 25 years since Charles Honorton’s untimely death, and in marking that anniversary it seems appropriate to review modern criticism of parapsychology to see to what extent his portrait of skepticism in “Rhetoric over substance” still holds true. During this period, parapsychology has witnessed quite a dramatic transformation in its preferred methodologies and the particular expressions of psi they elicit (see, e.g., Broderick & Goertzel, 2015; Cardeña, Palmer, & Marcusson-Clavertz, 2015; May & Marwaha, 2015), and it has benefited from the availability of more standardised approaches to making sense of accumulated evidence (e.g., Baptista, Derakhshani, & Tressoldi, 2015; Bem, Tressoldi, Rabeyron, & Duggan, 2016; Mossbridge, Tressoldi, & Utts, 2012; Storm, Tressoldi, & Di Risio, 2010) such that one might expect to see similar advances in the nature and scope of skepticism. In the remainder of this paper I should like to test this expectation by focusing on the contributions to Krippner and Friedman’s (2010) book, *Debating psychic experience*. This well-regarded collection of essays and rejoinders represents a coming together of the advocate and counter-advocate communities and has much in common with the earlier CICAP volume. It includes critical appraisals of the state of parapsychology from James Alcock, Ray Hyman, Chris French, Michael Shermer, and Richard Wiseman, so I think is a fair representation of the skeptical position in the 21st century. The advocate position is represented by Dean Radin,

Chris Carter, and Stephan Schwartz who, although fewer in number, are very capable of giving an informed response to the criticisms raised. In reviewing this material I found a number of recurrent themes that I would like to explore before reflecting on how this might be similar to or different from the state of affairs a quarter of a century ago.

Statistical Problems

Honorton noted that the cycle of objections to parapsychology begins with statistical concerns. In *Debating psychic experience* this focuses especially on a suspicion that meta-analysis is being misused. Hyman (p. 44) argues that “a meta analysis is basically an exploratory rather than confirmatory procedure … [such that] parapsychologists who try to justify the replicability of psi results with meta-analysis are using a retrospective notion”. This seems unnecessarily restrictive. For example, it seems clear that some of the variables incorporated into the design of the PRL autoganzfeld trials (most notably the effects on performance of using dynamic versus static targets and sender-receiver pairs who were or were not emotionally close) were derived from the earlier ganzfeld debate and joint communiqué (Bem & Honorton, 1994) and so justifiably any analysis of these variables in the latter meta-analysis could be classed as prospective rather than retrospective.

As in previous publications (e.g., Hyman, 2009), Hyman’s deep-rooted suspicions concerning meta-analytic reviews that followed the ganzfeld joint communiqué leads him to eschew them in favour of a single prospective study. He invariably chooses Broughton and Alexander’s (1997) series as his case in point. This study failed to replicate the autoganzfeld outcomes, with an overall hit rate of 25.8% (albeit with an emotionally close series that gave a significant hit rate of 37.3%), and he interprets this as compelling evidence that psi effects cannot be replicated. But, as I pointed out to Hyman in an exchange published in the UK’s *Skeptic* magazine (Roe, 2009; that is, over a year prior to the publication of *Debating psychic experience*), one could just as easily have chosen as one’s prospective study Parker’s (2000) automated ganzfeld database, consisting of 150 trials that gave a significant hit rate of 36%, or Dalton’s (1997) series of 128 trials with creative participants that gave an even more impressive hit rate of 47%. Which of these should we prefer as our definitive test? None. Although it is tempting to focus on the outcomes of individual studies, particularly when so few people are professionally engaged in parapsychological research and it takes so long to build up anything like a reliable database, we must accept that individual studies are susceptible to giving outcomes that reflect sampling error or are affected by idiosyncratic features of the experimental environment — not obscure or mystical features, but ordinary factors such as experimenter-participant rapport or differences in recruitment strategy. For this reason I believe we must prefer summary reviews when making judgments about the robustness of effects, whatever the shortcomings of this approach.

Incidentally, with respect to sampling error, Chris Carter in his essay in *Debating psychic experience* offers a secondary analysis of the Broughton and Alexander failed replication, stating (p. 160):

If the true hit rate were 33 percent with 25 percent expected by chance alone [as suggested by Bem and Honorton], then the probability that a sample size of 151 will fail to yield results significant at the 5 percent level is 28 percent. In other words, Broughton’s failure to replicate with a sample that small is even less remarkable than flipping a coin twice and getting heads both times.

This does seem to undermine Hyman's argument for making definitive statements based on the outcome of single studies.

Replication Problems

The value that Hyman places on prospective studies clearly derives from expectations he has concerning independent replication. On the first page of his review he asserts that "science can deal only with data and evidence that are objective, lawful and independently replicable" (p. 43) and he evaluates the claims of parapsychology in relation to whether they meet these criteria. One does not need to be a psychic to predict that his conclusion is negative. In his judgement, "parapsychological claims depend upon evidence that is inconsistent and apparently nonreplicable" (p. 47), and later he complains, "somehow parapsychology has managed to continue to pursue its claims even after a long history of inconsistent and nonreplicable evidence" (p. 50). Now, he is characteristically vague when it comes to which lines of research he has in mind when making this claim for inconsistency, perhaps because it is difficult to identify specific examples. Recent mathematical reviews of research on dream ESP (Storm, Sherwood, Roe, Tressoldi, Rock & Di Risio, in press), the ganzfeld (Storm, Tressoldi, & Di Risio, 2010), predictive physiological anticipation (Mossbridge, Tressoldi & Utts, 2012), distant intentionality and the feeling of being stared at (Schmidt, Schneider, Utts & Walach, 2004), and "feeling the future" via implicit precognition studies (Bem, Tressoldi, Rabeyron, & Duggan, 2016) all suggest that effects can be much more robust and consistent than is portrayed here, giving cumulative outcomes that differ from chance expectation to a highly significant degree (I discuss replication in more detail in Roe, 2016a). It seems clear to me that the onus is on counter-advocates to demonstrate that their concerns apply to particular datasets, and where they fail to do so then the criticism should be regarded as a rather hollow rhetorical device.

Interestingly, in his contribution to this volume, Richard Wiseman is more specific, noting that "replicating Rhine's work proved highly problematic, with researchers struggling to find individuals who could reliably produce above-chance scoring" (p 170-1), and this gives us something we can empirically verify. However, his description is at odds with Honorton's (1975) summary of the same material, where he shows that 27 of 33 such experiments were independently significant, when perhaps two might be expected by chance. More of these studies came from outside Rhine's laboratory than from within it, contrary to popular perception and implying independent replication. It seems, then, that where claims are specific enough to be tested they turn out to be untrue.

Another way in which this criticism often remains vague is in failing to prescribe the level of replication that would be regarded as acceptable. Hyman sidesteps this issue by referring to phenomena from psychology that he believes are essentially repeatable on demand. He notes (p. 137)

in psychology ... introductory students can be assigned *hundreds of paradigm experiments* in perception, memory, learning, decision making, and the like with full confidence that the students will obtain the expected outcome. Parapsychology stands alone [he says] as the only discipline claiming to be a science that has not one such experiment. [emphasis added]

Notwithstanding that Hyman is very selective in the areas of psychology from which he draws these paradigmatic experiments (it would have been harder to identify examples from social psychology, health psychology, and personality psychology, let alone clinical or depth psycholo-

gy), even within this restricted range his claim is simply wishful thinking. It is clearly a very long time since Hyman last ran a research methods workshop in psychology! Those workshops do cherry pick some of the most robust effects so as to be able to focus on learning about the methods of data collection and analysis. Nevertheless, in my 25 years of teaching research methods almost every workshop group includes maverick outcomes, and these are never treated as suggesting the effects are delicate, capricious or suspect.

In his contribution to *Debating psychic experience*, Chris French acknowledges that

direct replications are quite rare in all areas of science, including psychology. Furthermore, many psychological effects reported in the literature have turned out to be difficult, sometimes impossible, to replicate. This often comes as a complete revelation to new postgraduate students who ... are shocked to discover that often they cannot even replicate the basic effects that they intended to investigate in their own research. (pp. 57-58).

This has been my experience. I had one colleague whose cognitive psychology PhD consisted of a suite of 10 experiments of which only 2 gave data that were consistent with the prevailing theory within which she was working. There are no prizes for guessing which of these experiments have been published and which languish in a rarely consulted PhD thesis. Another PhD candidate at my university withdrew from his studies (also in cognitive psychology) because he was unable to reproduce the established effect that he needed to demonstrate before he could go on to look at the effects of varying conditions. It seems clear, then, that replication on demand is an unrealistic expectation for many social science phenomena.

Hyman also portrays psi phenomena as susceptible to decline effects and other inconsistencies that suggest the effects are inherently capricious, citing parapsychologists such as Jim Kennedy (2001, 2003) and Dick Bierman (2001). However, when I considered the issue of replication for a recent issue of *Mindfield* (Roe, 2016a) I actually found that when analysed by Baptista, Derakshani and Tressoldi (2015) replication rates in parapsychology—at least for the ganzfeld—closely matched what they expected given the effect sizes reported and the study power typically involved. I am not persuaded, then, that parapsychological phenomena are so inconsistent or unlawful as to require some special property to explain them.

Indeed, replication rates seem at least comparable to many of those found in more mainstream areas of psychology. The Open Science Collaboration (2015), a coalition of 270 research psychologists, was designed to address the dearth of exact replications published in psychology journals. They agreed to conduct exact replications of published studies to see what proportion of findings could be confirmed independently. To avoid selection bias they chose as their sampling frame articles published in 2008 in three journals that represented premier outlets for psychological research (*Psychological Science*, *Journal of Personality and Social Psychology*, and *Journal of Experimental Psychology: Learning, Memory, and Cognition*). Outcomes were deemed significant if the probability of the observed result was less than or equal to $p = .05$ given the null hypothesis. Unsurprisingly, given publication bias towards positive outcomes, 97 of the 100 original effects were significant, with other results falling in the “suggestive” range, with p values between .05 - .06. Given the statistical power of the replication attempts, they predicted that 89 would be significant, but in fact only 35 met this threshold. Most of the replications (83%) produced a smaller effect size than did the original. This mini decline effect could reflect regression to the mean,

or the capitalisation upon chance variation in outcomes due to sampling error exacerbated by a pronounced publication bias towards significant results. (There is no publication bias in the replication studies because all results are reported whatever the outcome.) Baptista and Derakhshani (2014) make a persuasive argument that the replication rate found in the Open Science Collaboration is what one would expect for a database that consists of studies with an average study power of about 35% so that only 35% of the original studies represent true effects, and these have been replicated with high fidelity. Ominously, of course, this would imply that 65% of reported successful outcomes reflect Type 1 errors, and this interpretation has been typical of more mainstream coverage (e.g., Baker, 2015). In terms of how to judge replication levels, this stochastic approach provides, I think, a more realistic context within which to assess parapsychological outcomes than the paradigmatic one suggested by Hyman.

Insinuation of Methodological Problems as Responsible

Nevertheless, in attempting to account for a supposed inconsistency in outcome, skeptics still allude to methodological weaknesses. Sometimes this is expressed quite subtly, so French (p. 56) finds that:

the best research in parapsychology appears to be at least as scientific as that in other areas of social science, including psychology. Of course, *there are many examples of shoddy research* in all disciplines but it is only fair to judge a discipline on the basis of its highest quality outputs. (emphasis added)

Others speak more baldly. Hyman still refers (p. 143) to the original ganzfeld database as “riddled with flaws”, and “as a result of the debate between Honorton and me, the quality of ganzfeld psi experiments has improved greatly. Along with this improved quality, the average effect sizes have also declined” (p. 144). It is indeed true, according to Storm Tressoldi and Di Risio that there is a significant negative correlation between year of study and ES for free response studies ($r_s = .21, p = .049$), though they claim that the data are better accounted for by a quadratic model that reflects a rebound effect ($R^2 = .12, p = .004$), with the most recent studies showing larger effect sizes, presumably despite continuing improvements in quality.

More tellingly, when discussing his original coding of ganzfeld studies and subsequent debate with Honorton, Hyman offers us a rare insight into the purpose of flaw analysis for him. He admits that,

By devoting my effort and time towards defending my assignment of flaws and showing how they could have accounted for the effects, I allowed the parapsychologists to switch the burden of proof from their side to my side. It was now up to me to prove that the flaws made a difference. *This is impossible to do on the basis of a single database* (p. 148, emphasis added)

This is a puzzling comment. It is unclear to me what the point would be of identifying some design feature as a *flaw* if it is not possible to demonstrate that this may be at least partly responsible for the supposedly spurious effect. Identifying a flaw as a flaw in some abstract inconsequential sense would relegate Hyman’s diligent efforts to the category of Mark Hansel’s fantastical suppositions rather than offering a cogent alternative explanation for actual outcomes.

Experimenter/Skeptic Effects

Wrapped up in the issue of replication difficulties and methodological artefacts is a concern about experimenter effects. In summarising his contribution, French asks for a reliable demonstration of psi with a medium to large effect size that can operate in the presence of skeptics. Although of course this request seems eminently reasonable, it simultaneously subtly perpetuates the myth that psi phenomena are coy in the presence of disbelievers, at best suggesting a whimsical or capricious character that sets them apart from other phenomena of the natural world, at worst suggesting that effects arise from methodological errors that are not repeated by more sophisticated skeptical researchers. For example, Alcock claims (p. 31) that “there have been a number of scientists over the years who have taken an interest in parapsychological matters, to the extent that they have conducted their own research but then later abandoned it when their data showed no evidence of paranormality”. As a case in point, he refers to two studies by Stanley Jeffers (2003) that failed to find evidence of PK. Embarrassingly, Carter is able to point out (p. 89) that, rather than abandoning psi as a lost cause, Jeffers went on to publish a significant PK effect in his next study (Freedman, Jeffers, Saeger, Binns, & Black, 2003). Conspicuous by their absence from a list of neutral scientists are figures such as Robert Jahn and Daryl Bem, who were initially very skeptical of the psi hypothesis but were persuaded to conduct their own research into psi after being impressed by the results of others and then found out that they could produce their own effects. I suspect that these individuals would be dismissed as “parapsychologists” rather than as initially neutral scientists, but of course that defence would reduce the claim to a tautology. It also seems untenable to me to claim, for example, that the replications of Bem’s “feeling the future” suite of experiments from 33 laboratories in 14 countries were all conducted by believers or sympathisers (Bem et al., 2016).

Nevertheless, although I do not believe that skeptics will inevitably fail to find evidence of psi in any experiment they conduct, it also seems obvious that the experimenter can have an effect upon the beliefs, expectations, and behaviour of the participant in ways that affect the outcome, such that it is rather surprising that commentators are suspicious of experimenter effects. I discussed this in some depth in a recent *Mindfield* article (Roe, 2016b) and found that such effects should be expected given the social dynamic interaction between experimenter and participant that affords an opportunity for all sorts of implicit information to be communicated. I noted there the very extensive literature that documents such effects in conventional areas of psychology. Rosenthal (1994, p. 176) refers to 464 studies that demonstrate the effect in a variety of contexts, including studies of reaction time, interpretation of inkblots, animal learning, person perception, and skill development. Expectancy effects have been demonstrated not just in the laboratory, but in classrooms, courtrooms, nursing homes, management settings, and even swimming pools (Rosenthal, 1994, p. 178). It would be astonishing if we were not to find evidence of expectancy effects in parapsychological studies.

Even so, Wiseman writes, “perhaps the most far reaching version of [the] ‘get out of the null effect free’ card involves an appeal to the ‘experimenter effect’, wherein any negative findings are attributed to the psi inhibitory nature of the researchers running the study” (cited by Carter, p. 98). This is especially baffling since one of the most compelling demonstrations of the experimenter effect in parapsychology comes from Wiseman himself. He and Marilyn Schlitz had been independently conducting staring detection studies, with Schlitz reporting evidence of psi (Schlitz & LaBerge, 1994) and Wiseman reporting chance outcomes (Wiseman & Smith, 1994). Interestingly

they agreed to conduct a series of joint studies in which they would both use the same experimental set-up and draw participants from the same pool to see whether they could replicate their differential performance. The first experiment (Wiseman & Schlitz, 1997) was conducted at Wiseman's Hertfordshire laboratory and involved 16 participants each. Conditions were identical for the two groups except for the identity of the experimenter/starer. The EDA of Schlitz's participants was significantly higher in stare than in no-stare trials, as predicted, whereas the EDA of Wiseman's participants showed no effect, thus confirming their earlier, separate findings. A second experiment (Wiseman & Schlitz, 1999) took place at Schlitz's laboratory at the Institute of Noetic Sciences (IONS) with both experimenters again employing the same procedures, equipment, and participant pool ($n = 35$ for each experimenter). Schlitz's participants again showed a statistically significant effect, whereas Wiseman's did not, although in this case Schlitz's participants were significantly *less* activated during the stare than nonstare periods, contrary to study one. In a third study (Schlitz, Wiseman, Watt, & Radin, 2006), the design was more complicated so as to tease out the roles of experimenter and starer. The study was again run at IONS and the 100 participants were staff members or local volunteers. The mean effect was somewhat larger when Schlitz was greeter rather than Wiseman, and when Wiseman was starer rather than Schlitz, but none of the effects deviated meaningfully from chance. This is a shame given that the study promised to tease apart two important roles, but with no evidence of psi there was no possibility to explore experimenter effects. In my *Mindfield* article I reflect on interpersonal and procedural differences between Wiseman's and Schlitz's approaches when interacting with participants. Based on Rosenthal's findings it seems clear to me that Schlitz would give rise to positive results and Wiseman to negative ones.

Lack of Interest in Normal Explanations

Alcock complains (p. 38) "there is an obvious lack of interest within parapsychology to explore ... non-paranormal explanations. This is regrettable for it adds weight to my contention that parapsychology represents beliefs in search of data, rather than data in search of explanation". This seems an odd claim to make when so many parapsychologists have contributed to the literature concerned with non-paranormal explanations for paranormal belief and experience (such as Carlos Alvarado, Etzel Cardeña, James Houran Harvey Irwin, Rens Lange, Michael Persinger, and Michael Thalbourne). In contrast, there is a surprising dearth of empirical testing of normal explanations by counter-advocates. Honorton's earlier characterisation of the skeptic as an armchair theorist rather than an empiricist comes to mind. Let us take for example cold reading as an explanation for impressive communications from psychics and mediums. The cold reading model describes how a number of techniques can be used either to persuade people that generally true information says something especially or even uniquely true about themselves or to glean information from people nonverbally and verbally that can be fed back later as if from a paranormal source. The model is quite elegant and plausible in some circumstances. It also makes testable assumptions about client behaviour, including their tendency to recall only the hits and forget the misses during a reading, and to elaborate on given material in ways that make the recalled version more specific to them. Surprisingly, to my knowledge the only attempts to test these assumptions have been conducted by a parapsychologist (Roe, 1994, 1995). Rather than seeking experimental evidence for cold reading, skeptical researchers have been content to apply the method after the fact to given "real-world" data in a manner that would be scorned if done by a parapsychologist (e.g., Greasley, 2000; Underdown, 2003; for a more detailed overview see Roe & Roxburgh, 2013).

Rhetorical Ploys 1: Eschewing the Data

My main response to the contributions to *Debating psychic experience* from the most influential and knowledgeable members of the counter-advocate community is surprise at how superficial is their coverage of the parapsychological literature. Admittedly, in essay reviews it is difficult to go into great detail, but their reticence to deal with specifics (in terms of reanalysis of datasets, scrutiny of experimental methods, or elucidation of the effects of particular suspected flaws) seems to me a conscious strategy designed to make it difficult to refute any of the broad claims that they do make. Worryingly, as a consequence the critics show very little familiarity with particular contemporary studies or outcomes.

More commonly, the authors simply make sweeping generalisations with no attempt to evidence or justify them. Thus Hyman claims (p. 195) that every science but parapsychology builds upon its previous data, “the data base continually expands with each new generation, but the original investigations are still included. In parapsychology, the data base expands very little because previous experiments are continually discarded and new ones take their place”. And Alcock (p. 32) claims that phenomena have been abandoned when “no solid evidence was forthcoming” only to return at later times with a new generation of enthusiasts. These assertions are much too vague and insubstantial to support any kind of evidence-based response.

Shermer is especially guilty of wilful ignorance of the literature. He asserts (p. 155) “under controlled conditions remote viewers have never succeeded in finding a hidden target with greater accuracy than random guessing” — even a cursory perusal of the literature provides numerous examples of statistically significant remote viewing experiments (cf. Dunne & Jahn, 2003; Roe & Hickinbotham, 2015; Schlitz & Haight, 1984; Targ, 1994). He goes on, “the occasional successes you hear about are due either to chance or suspect experimental conditions, such as when the person who subjectively assesses whether the remote viewer’s narrative description seems to match the target already knows the target location and its characteristics. When both the experimenter and remote viewer are blinded to the target, *my analysis of the literature* indicates that psychic powers vanish” (p. 155, emphasis added). Of course, no particular studies are cited in this parodic review since it is unthinkable that any of the studies by the researchers I have just listed would be so naively designed as to not be double blinded. In the circumstances, the idea that Shermer’s conclusions are based on a thorough review of evidence is unpersuasive. This type of shallow scholarship cannot be allowed to pass unchallenged.

In this context I can return to the skeptic’s mantra I mentioned earlier. Richard Wiseman begins his essay with “after over one hundred years of parapsychological research there exists no consensus on the most fundamental question facing the field — does psi exist?” (p. 169). In an earlier exchange with Hyman, who had also opened with this gambit, I pointed out that clearly the reader is expected to infer that extension over such a long time (in research terms) equates to extensive and intensive activity, so raising their expectations as to the degree of progress that should have been made by a bona fide science tackling real phenomena. Against this, any actual progress seems meagre, and the reader is moved to conclude that the phenomena are non-existent rather than elusive. But of course this inference is unwarranted. Sybo Schouten (1993) demonstrated how unlike other social sciences parapsychology is in terms of the very limited human resources it has available to it, such that the “over one hundred years” amounts to just 53 days of activity

in North American psychology during the period that Schouten was writing. I recently discussed this in more detail and offered an update (Roe, 2017), and agreed with Schouten (1993) that, given available resources, progress is at least comparable with that found in psychology.

However, a legitimate issue raised by Wiseman's reference to a lack of consensus is the ambivalence of the parapsychological community with respect to the quantity or calibre of evidence for various anomalies collected under the label *psi*. It is a straightforward matter to distinguish between any effect and its interpretation so we need not be mired in ontological debates and I am beginning to think that the PA has done the field a disservice in not making a position statement with respect to the evidence, one that draws attention to recently published summary evaluations and makes observations regarding the size and consistency of effects in relation to phenomena that have been generally accepted in other areas of social science.

Wiseman also makes the sweeping and unfalsifiable generalisation that parapsychologists conduct very many studies that fail and therefore are never written up for conference presentation and journal publication. This observation is apparently based on personal experience and hearsay. In fact the only "evidence" comes from a study by Watt (2006) of undergraduate projects that unsurprisingly found a strong positive publication bias, with projects that "worked out" being presented at conference and/or submitted for journal publication. Having spent the last 25 years teaching in various university psychology departments, I know this is common practice across all areas of psychology; indeed, it is regarded as a necessary way of boosting research output for overworked teaching staff, who typically co-author these studies. This is not to excuse the practice, which remains highly problematic given how it can serve to skew the database, but it does show that this is not a problem that is peculiar to parapsychology. The description of the issue by Wiseman implies that accepted practice in parapsychology is different from that in psychology and other social sciences when plainly it is not.

Rhetorical Ploys 2: Assuming an Inappropriate or Unachievable Comparator

This implication that parapsychological practice is somehow deficient or substandard takes a number of forms. I found that a common strategy adopted by the skeptics in this volume was to use examples from physics and other natural sciences as exemplars for how normal science is practised, rather than examples from the social sciences. For instance, when explaining independent replication, Alcock writes (p. 36), "scientists may not fully understand what underlies gravitational attraction, but they can predict its effects with great accuracy. All competent researchers will obtain similar results when studying gravitational influences". Likewise, when Hyman claims (p. 48) that the term *anomaly* is used in parapsychology "in ways that differ in important ways from the manner these terms are used by the scientific community", the examples he cites for the appropriate usage are from physics, such as the orbital anomalies that led to the discovery of Neptune, and a disconfirmed anomaly that suggested a planet closer to the sun than Mercury! Later, in thinking of examples of controversial claims that came to be accepted due to the accumulation of confirming evidence Hyman lists "relativity, quantum mechanics, evolution by natural selection, N-rays (sic), and continental drift..." (p 135), while Alcock's rebuttal refers to relativity theory as exemplar of the exactitude needed for a testable theory.

It is not at all clear to me why we should expect parapsychological practice and the behaviour of its phenomena to operate in a similar manner to physical science and its phenomena, given that

the former deals with a sentient subject matter and highly complex systems with multiple layers of interacting variables (I allude to this when I discuss standards of replication in Roe, 2016a). Indeed, French concedes that “if psychological research were to be subject to the same level of critical scrutiny, doubt would probably be cast upon many (but not all) of the effects reported”. It is disappointing that Hyman and Alcock seem quite incapable of providing even one instance from the history of social science of normative practices or accepted phenomena against which psi research might reasonably be compared.

Conclusion

So what can we conclude about the state of skepticism from this comparison of essays separated by a quarter of a century? My enduring impression is *plus ça change, plus c'est la même chose* (the more things change the more they stay the same). The criticisms laid out against parapsychology in *Debating psychic experience* would not, on the whole, have been out of place in the *Scienza & Paranormale* special issue and, I suspect, would have been treated with similar disdain by Honorton. Indeed, the skeptical positions presented here seem lazily anachronistic given the great changes that have taken place in parapsychology in terms of the research approaches adopted and the bodies of data they have produced. It is quite disturbing to see virtually no mention of pre-sentiment, staring detection, modern mediumship, or implicit psi research. Even for that favourite target of criticism, the ganzfeld (which has 41 index entries), time seems to have frozen with Bem and Honorton's (1994) meta-analysis and responses thereto despite some of the concerns raised in that debate having been addressed in later contributions (e.g., Bem, Palmer & Broughton, 2001; Storm & Ertel, 2001).

Instead we have concerns raised about the precarious nature of replication in parapsychology. But these survive scrutiny only insofar as they remain vague and general, and can exploit an expectation for a kind of replication on demand that is only possible in the natural sciences, if at all (a lesson that psychology is learning as it matures and embraces more stochastic approaches to replication).

On this evidence, it is tempting to conclude that engaging with dyed in the wool skeptics is futile, since there seems no real prospect of constructive dialogue, as seemed possible in the mid 1980s. But just as a government in office needs a discerning opposition to call it to task to ensure good governance, so parapsychology needs a strong and capable counter-advocate movement to ensure that our methods are fit for purpose and our findings valid and meaningful. We need to demand more of our skeptical colleagues otherwise we are partly culpable. As Chuck Honorton warned in his PA Presidential Address (cited by Palmer, 1993, pp. 177-8), “we should not continue to play the game that eventually, after all, science is objective and our findings will eventually become accepted on their merit. I do not believe this. We have been struggling against irrational prejudice for a long time ... if our work is faulty, it should be criticised, but the criticism must be substantive, not a priori”.

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Abstracts in other Languages

French

Adresse Présidentielle PA 2017: Le scepticisme flétrissant

Dans cette adresse, je passe en revue les objections à la parapsychologie développées par des représentants de haut niveau de la communauté sceptique, à travers leurs contributions dans le livre de Krippner et Friedman (2010), Debating psychic experience, en les comparant avec de précédents commentaires critiques publiés en 1993 lors d'un numéro spécial de *Scienza & Paranormal* consacré à la parapsychologie. Plusieurs des affirmations faites dans ce précédent numéro avaient déjà été discutées par Charles Honorton, dans son article devenu classique : "Plus de rhétorique que de matière : l'état appauvri du scepticisme", et je revisite certains de ses arguments pour évaluer dans quelle mesure le sceptique y a répondu. Je constate qu'en dépit de 25 années écoulées, et les avancées concomittantes de la parapsychologie quant à ses approches, ses méthodes et les données accumulées, le scepticisme montre peu de preuves d'un progrès et pourrait même avoir regressé vers des pratiques rhétoriques encore plus rudimentaires, qui s'appuient sur des aspersions vagues n'ayant que peu de familiarité avec les activités réelles et les découvertes de la parapsychologie contemporaine.

German

PA-Präsidentenansprache 2017: Vernichtender Skeptizismus

In dieser Ansprache untersuche ich die Einwände gegen die Parapsychologie, die von führenden Vertretern der skeptischen Gemeinschaft in ihren Beiträgen zum Buch von Krippner und Friedman Debating psychic experience (2010) geäußert wurden, und vergleiche sie mit früheren kritischen Kommentaren, die 1993 in dem der Parapsychologie gewidmeten Teil des Sonderheftes der Zeitschrift *Scienza & Paranormale* erschienen sind. Viele der Behauptungen in dieser früheren Sammlung wurden bereits von Charles Honorton in seiner klassischen Erwiderung "Rhetoric over substance: The impoverished state of skepticism" [„Mehr Rhetorik als Substanz: Der dürftige Zustand des Skeptizismus“] herausgefordert, und ich würdige einige dieser Argumente erneut, um zu prüfen, inwieweit der Skeptizismus darauf eine Antwort gefunden hat. Ich bin der Meinung, dass ungeachtet der mittlerweile vergangenen 25 Jahre und der damit einhergehenden Fortschritte, was Zugänge, Methoden und akkumulierte Daten der Parapsychologie betrifft, der Skeptizismus nur geringe Zeichen von Fortschritt zeigt und in Wirklichkeit eher zu verkümmerten rhetorischen Praktiken zurückgekehrt ist, die eher auf vagen Anschuldigungen beruhen und kaum Vertrautheit mit den aktuellen Aktivitäten und Ergebnissen zeitgenössischer Parapsychologie erkennen lassen.

Spanish

Ponencia Presidencial de la PA, 2017: Escepticismo marchito

En esta ponencia considero las objeciones a la parapsicología de representantes de alto calibre de la comunidad escéptica en sus contribuciones en el libro de Krippner y Friedman (2010), De-

bating psychic experience, y las comparo con el comentario crítico publicado en 1993 como parte de un número especial de *Scienza & Paranormale* dedicado a la parapsicología. Muchas de las afirmaciones hechas en esa colección anterior ya habían sido cuestionadas por Charles Honorton en su clásico ensayo titulado “Rhetoric over substance: The impoverished state of skepticism”. Reviso algunos de esos argumentos para medir hasta qué punto el escepticismo ha respondido a ellos. Me parece que a pesar del paso de 25 años y de los avances concomitantes en los enfoques, métodos, y datos acumulados en la parapsicología, el escepticismo muestra poca evidencia de progreso y de hecho puede haber regresado a prácticas retóricas más rudimentarias basadas en aspersiones vagas y muestra muy poco familiaridad con las actividades y hallazgos reales de la parapsicología contemporánea.

Spontaneous Social Behavior Can Implicitly Express ESP Information¹

James Carpenter and Carol Sanks (Deceased)

Abstract: We report a new procedure for accessing the implicit expression of psi information. The assumption that psi information can unconsciously inform the development of social interaction guided this research. Members of a quasi-therapeutic group carried out unstructured sessions while a distant experimenter randomly selected an ESP target (a picture). Immediately following each session, group members blindly rated the target and three decoy pictures for their degree of association to the session that had just transpired. Each person's ratings were independent and global, assessing congruence in mood, content, and significant session-events between session and pictures. Averaged ratings yielded one ESP score per session. A group of volunteers with evolving membership met weekly over a period of several years, accumulating 386 sessions (excluding pre-determined pilot trials). Overall, the group was able to correctly associate its spontaneous group processes with the days' targets to a significant degree. The group also rated sessions in terms of several qualities such as risk, helpfulness, and hurtfulness, immediately following the session and prior to viewing the day's pictures, and rated their moods prior to beginning the session. The group was most successful at expressing and identifying the target when sessions did not involve too much intimate self-disclosure, and when members began the sessions with moods low in anxiety and skepticism.

Keywords: First Sight, implicit psi, group process, ESP.

The implicit expression of psi information has received increased attention in recent years. For example, Radin (1997, 1998), Bierman and Scholte (2002) and others have demonstrated that a precognitive response to upsetting stimuli can be expressed by faint, unconscious physiological arousal, Bem (2011) has shown that processes of learning and esthetic appraisal may partly express unconscious precognitive information, Palmer (2006) has shown that participants' efforts to find order in strings of numbers may express patterns to which they will be exposed in the near future, and Carpenter, Simmonds-Moore, Moore, and Carpenter (2009, 2012) found that experiences of preferences for pictures varied as a function of extrasensory primes as moderated by theoretically-specified variables.

Theoretical Base

A theory of psi developed by the first author, *first sight theory* (henceforth called FST; Carpenter, 2004, 2005, 2012) asserts that this sort of implicit expression of psi is an indication that the mind employs psi information normally, unconsciously, and continuously, and uses it as an initiating part of the unconscious formation of all experiences and behavioral choices. From this point of view, psi is not rare, unpredictable, and anomalous; it is reliable and continuously employed while normally invisible. The aim of a psi experiment changes from an attempt to

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challenge and catch the expression of a rare ability, to an effort to specify procedures and variables in order to reveal an implicit, ongoing process at work. Although this study began when FST was only partially explicated, basic assumptions of FST guided our procedures and hypotheses.

Some Key Parts of First Sight Theory Pertinent to this Study

1. *From an FST point of view, psi prepares us for experience and is always expressed implicitly.*

FST assumes that the mind engages extrasensory realities and, with them, generates orienting, pre-conscious responses that prepare the individual to quickly apprehend the correct meaning in developing situations and respond to them in the most apt way. A normal function of psi is to prepare us for what will happen next. Psi is assumed to function the same way that subliminal perception does, by guiding the development of conscious experiences and actions, while never being directly available to awareness as conscious knowledge. What may be available to awareness is some of the implicit expressions of this unconscious orienting activity (for example, a relevant bit of imagery or shift in mood or physiological reaction or change in associative tendency).

Even if individuals consciously have in mind a wish to somehow express the content of an extrasensory target, as in a laboratory experiment or mediumistic reading, the expression of psi is inadvertent, because they still have no idea what the evocative information is or where it comes from, or precisely which utterances or other behaviors make reference to the target, or in what ways they might imply it. The situation is the same with the implicit expression of sensory subliminal primes. Experimenters can see the primes at work because they know the hidden stimulus, but experiencers cannot. This has become a familiar fact to psychologists engaged in cognitive, clinical, social, and neuroscience research (Mlodinaw, 2012). FST applies this principle of unconscious cognitive and affective processing to psi.

What we call conscious or explicit psi experiences then are those expressions of psi information that happen to be correctly interpreted as reflecting some reality that is outside the range of sensory experience. Many others presumably pass by uninterpreted and unnoticed.

Since psi engagement is assumed to be implicitly ongoing, FST suggests that many aspects of everyday life should be studied in order to see how psi processes play a part. Spontaneous interpersonal interaction is an obvious candidate for such study.

Theory holds that the patterns observed in using one kind of implicit information will generally obtain in others as well – for example, patterns seen in processing extrasensory information will tend to be similar to those seen in processing long-term memories, and both processes should tend to make reference to goals and situational appraisals in similar ways. FST also assumes that conditions that favor the inadvertent expression of unconscious sensory material should also favor the expression of psi material. This assumption of parallel patterns of unconscious cognitive functioning is called the *hypothesis of functional equivalence* in FST. Carpenter (2012) has discussed the evidence for this parallel functioning, as in the relation between psi and subliminal perception (Schmeidler, 1988), psi and long-term memory (Irwin, 1979), and psi and creative processes (e.g., Holt, Delanoy, & Roe, 2004; Moon, 1973).

The assumed parallel between processing subliminal sensory and extrasensory information is pertinent to the current study. Studies have found that people respond to subliminal sensory primes in many cognitive, affective, and behavioral ways (Bornstein & Pittman, 1992; Dixon,

1981; Hassin, Uleman, & Bargh, 2005). While most research has focused on cognitive and emotional effects, interpersonal behavior may also implicitly express subliminal primes in certain situations. For example, aggressiveness increased after aggressive subliminal primes (Bargh, Chen, & Burrows, 1996) and cooperativeness after affiliative primes (Aarts et al., 2005). In this study we used pictorial ESP targets as if they were subliminal primes, with the assumption that people can unconsciously process such information and express it implicitly in their behavior, given their wish to do so. Our group members carried out sessions of interaction and then afterward rated their own behavior in retrospect and associated it to target and non-target material, while being masked to the identity of the target.

2. *Psi functioning is bi-directional, sometimes approaching and including information in implicit expression, and sometimes avoiding and excluding it. Predicting the direction of psi expression is one primary task of the theory.*

FST holds that approaching or avoiding some extrasensory meaning is an unconscious choice, made in the light of several factors including the content and desirability of the information, its degree of congruence with long-term goals and current tasks, and the degree of openness to liminal experience on the part of the person.

Psychotherapy and Psi

One reason that we believed that this situation would promote a positive direction of psi-expression came from observations reported by several psychotherapists of apparent expressions of psi influence in the context of psychotherapy sessions. Psychodynamically oriented psychotherapy is a situation intended to facilitate the expression and recognition of unconscious mental processes. Certain conditions often employed in psychotherapy to facilitate the conscious recovery of such things as forgotten memories and unconscious conflicts may be psi-conducive as well. In fact, much research suggests that this parallel functioning does obtain. For example, hypnosis, dreaming sleep, and free associations in a state of reverie have all been used as “roads to the unconscious” in psychotherapy, and they have been fruitful in parapsychology as well (Carpenter, 1988, 2012; Child, 1985; Stanford & Stein, 1984; Storm, et al., 2010). That psychotherapeutic conditions may yield extrasensory expressions along with the normally expected expressions of other unconscious processes has been confirmed by a number of therapists (e.g., Fodor, 1942; Hollos, 1933; Ehrenwald, 1970; Eisenbud, 1946, 1970; Mintz, 1983; Nelson, 1988; Rosenbaum, 2011). This expectation has been expressed in FST in its *Liminality Corollary*, which asserts that situations and states of mind conducive to the expression of unconscious processes in general should also be conducive to the expression of psi (Carpenter, 2012).

Some have argued that the therapeutic relationship should be especially psi-conducive because of its recapitulation of an infant’s trust and closeness (Ehrenwald 1955, 1970), and its amenability to close, penetrating observation (Eisenbud, 1969). For these reasons, we intended to create a situation that permitted not only spontaneous social interaction, but also qualities of trust and intra- and inter-personal exploration that psychodynamic therapists consider “therapeutic.”

Method

Nature of the Group

A small, congenial group interacts for an hour in a leaderless fashion while a separate experimenter randomly selects an ESP target elsewhere. The group’s focus is that of an experiential

therapy or support group, attending to personal concerns and interpersonal issues as they arise among the participants. There is no effort to consciously retrieve the target, as by guessing or associating to it, but all have "in the backs of their minds" the hope that their developing group process might somehow allude to the target in identifiable ways. At the end of the session the target is presented (blindly) to the group in a field of 3 decoys and each picture is assessed independently by each participant in terms of its degree of accord with the session that had just transpired. Only after assessment is completed, a member of the group obtains the identity of the correct target with a second phone call. Psi expression is indicated by high averaged group ratings of the actual target picture. No ethical review board existed at the Foundation for Research on the Nature of Man (FRNM) when this project began. However, customary ethical considerations were observed, including thorough pre-briefing of participants as to procedure, voluntary participation, and the right to discontinue at any time without penalty, the maintenance of confidential and anonymous records, and anonymous reporting of results.

Pilot Sessions

We began this project with three pilot sessions carried out with a group of volunteers from the Summer Study Program of the Rhine Research Center (then called the Foundation for Research on the Nature of Man, FRNM). The first author conducted gestalt therapy exercises while a target was being selected randomly and viewed by an agent in another part of the building. Participants were told that the instructor was assuming that an ESP target might function like a subliminal stimulus whose effect may be expressed subtly by a person's mood, spontaneous speech, or associations. Participants were asked to have "in the backs of their minds" the idea that the target might have a similar effect on them as they engaged in the play-like therapeutic exercises. The results were intriguing. In one session, for example, the target was an advertisement picturing a shiny red telephone with text about a worldwide network of affectionate connections among people. Two people entered most vividly into the exercises. The imagery of one centered upon very bright, shiny red fingernails, which matched the color and sheen of the most prominent feature of the target. The other became immersed in the fantasy of being a tree, with very large outstretched branches, and imagined his limbs reaching out to connect him lovingly with the whole world. This was congruent with the target's message. When the target was presented with a field of 3 decoy pictures it could be easily discriminated before learning that it was the target. All three pilot sessions garnered strong associations and successful identifications by majority votes.

Formal Project

We created a leaderless, quasi-therapeutic group that began meeting in 1986 and continued on and off, with some changes in membership, until June 1998, when it ended by prior mutual consent. The group accumulated a total of 386 sessions.

Participants

Over the span of the project, 18 participants (10 women) took part for varying lengths of time. All were supportive to strongly supportive of the psi hypothesis. One was Asian-American, two were Canadians, the rest were Caucasian-Americans. All were educated to a college or post-graduate level. Twelve had previous involvement in parapsychological research, one was a professional psychic. Ages ranged from 24 to 56. Nine were experienced therapists who shared a generally humanistic orientation, with experience of psychodynamic therapy, client-centered therapy and gestalt therapy. However, no one ever tried to "be the therapist" for other members.

An observer watching the group would think it represented the interaction of a support group made up of good friends who valued emotionally honest communication and shared a commitment to being helpful to one another and working through relationship issues as they arose. Only the two authors (a psychotherapist/parapsychologist and a psychiatric nurse/massage therapist) took part in the entire project.

Stages of Group History

There were different stages in the development of the group. We break its history down into three major, structural parts, in terms of emotional quality and membership. Two of the stages were rather brief. The numerical findings discussed in the Results section all pertain to all three parts combined. We discriminate them here only to give more understanding of the evolution of the group as such.

Group A. The first author collected a group of 7 colleagues who were willing to commit themselves to a series of group sessions with the dual aims of enriching their own personal adjustment, while also exploring how ESP targets might be found to influence therapeutic process. All were research workers in parapsychology who also had experience with psychotherapy. Fifty-two sessions were carried out by this group, held at the FRNM. Targets were randomly selected as before, but no one viewed the correct picture during the session, or knew of its content before the number identifying it was given to the group post-rating. This feature continued throughout the project. Thus, in the language of parapsychology, all the data reported here represent implicit clairvoyance, not telepathy. This group disbanded on prior agreement when two members moved away and scheduling became a problem for some others.

Group B. After the initial group stopped meeting, six months passed before we assembled another. This group contained several people who had participated before, as well as four others who were interested in the parapsychological aspects of the project but who, in retrospect, should not have participated in the study since they had no experience with group psychotherapy and were not prepared for the emotional intensity that others expected. This group carried out 22 sessions and ended a few sessions after a meeting in which one member experienced considerable emotional distress following a confrontation. The first author and another clinical psychologist then decided that the project should be halted until the group could be more carefully composed.

Group C. About a year later, a new group of eight was assembled. All members were experienced with psychotherapeutic group process as well as interested in exploring psi. With a few changes in membership, this group conducted 312 sessions.

Conduct of Sessions

After the pilot sessions, the group functioned without a formal leader, although different members might suggest certain agendas at times. Although it was understood that a target would be randomly selected and recorded by someone outside the group, there was *no effort to retrieve its contents* as by, for example, guessing or free associating to it. Instead the group members settled quickly down to creating a lively and productive session for their own purposes, as if no ESP target were involved, by focusing on their current concerns and their developing relationships with one another. The interaction varied in emotional tone, sometimes intense and revealing, sometimes riotously funny, occasionally conflicted, but generally playful, cheerful, and warm. As in a therapy group issues would often be carried over from one week to another (e.g., "How is your brother

doing?" -- "Something you said last time has bothered me all week."). One member, a massage therapist, might quietly treat someone's hurt back or neck as the talk progressed. After the initial sessions, the ESP aspect of the situation became less novel and we rarely mentioned it until the end of the meeting when the time for rating four pictures came. For the most part we largely seemed to forget it in the engaging interactions.

Targets

Four hundred pictures taken out of popular magazines served as targets and decoys. They were assembled in sets of four intended to be as internally varied as possible, and the sets were kept in 100 numbered manila envelopes. During each session an independent experimenter at the FRNM used a PDP-11 computer to select two numbers, the first (1-100) to pick an envelope, the second (1-4) to select a target within the envelope. These numbers were drawn "next-up" from the queue of random numbers used for all studies at the laboratory at that time.

Target rating. At the end of each session, one member retrieved the number selecting an envelope, and the 4 pictures inside were spread out in front of all members for rating. After some discussion if any desired it, each member silently ranked the pictures from 1 to 4, with 1 being their choice as the picture most reflected in the day's session, and also rated each picture on a scale of 1 to 100 for its degree of association to the session. We considered the session's emotional tone, themes, notable events, and distinctive semantic and behavioral expressions as bases for rating a holistic impression of "fit." It is as if we were asking: "If today's session could be given a pictorial illustration, which of these four would best do the job?" After all ratings of the pictures and group process, the group obtained the second random number and the correct target was disclosed. After this disclosure, the session disbanded.

Periodically all data were entered into a database for analysis, and all entries were later double-checked by an assistant not otherwise connected with the study. All subsequent computations were then done with SPSS software. Each session yielded one primary ESP score, which was the rank of the average rankings given by all members to the correct picture. Following the convention then in practice at the FRNM, we considered averaged rank scores of 1, 1.5 or 2 a binary hit, and 3, 3.5 or 4 a miss, for a simple index of success or failure. In a few cases an average rank score of 2.5 was obtained. By prior agreement, the average *ratings* were ranked, and, with one exception, this permitted a classification of the session as either a hit or a miss.

Continuous, roughly normal ESP *z*-scores (Stanford & Mayer, 1974) were also calculated from each individual's ratings by subtracting the (0 to 100-point) rating given to the target from the average of ratings given to all 4 pictures, and dividing this difference by the standard deviation of the 4 ratings. All members' *z* scores were then averaged for a single group score for the session. Since to a large extent the composition of the group included the same persons, these data should be thought of as a time-series of repeated testing, which creates the possibility of autocorrelation over time. If significant autocorrelation exists, the standard assumptions for significance testing may not be met. In order to assess this possibility, an expert in time-series analyses (Adrian Ryan) subjected the distribution of ESP *z*-scores to a standard correlogram analysis. This determined that a significant autocorrelation problem does not exist in these data. He concluded that the scores were suitable for parametric analyses and therefore were used for testing relations with other variables.

Ratings of Session Quality. After the first few meetings, it became clear that sessions varied considerably in terms of the quality of group process, with some feeling rather strained and

awkward while others were “deeper,” more spontaneous and flowing. This difference in session quality appeared to be related to the group’s success at identifying the ESP target. For this reason, a global rating of the session was added to the procedure at Session 19. At the end of the session, but before seeing the day’s pictures, each member made a rating on a 5-point scale that was loosely defined as indicating overall satisfaction with the session. These were averaged as well, for one overall “session rating”.

We became dissatisfied with the vagueness and poor consensuality of this global measure, so at Session 53 we shifted to 8-point ratings on several more specific dimensions: How meaningful was today’s session? How engaging was the session? How connected do you feel to others in the group? How revealing were the most involved people today? How much risk was taken today? How spontaneous and surprising was interaction today? How anxious were you left feeling? How helpful for you was the session? How hurtful was the session? These ratings were done for 334 sessions. Still other dimensions were added later, but they were used in so few sessions that we have not included them in correlation and regression analyses.

Analyses

We measured overall expression-of-psi with a chi-square analysis comparing the hits (ranks 1 and 2) to misses (ranks 3 and 4). Based on an assumed parallel between extrasensory information retrieval and the achievement of information and insight in psychotherapy, we began with the assumption that variables we associated with “good” psychotherapy sessions might also yield positive access to extrasensory targets. However, with no prior experimental results to guide us we did not pose directional predictions and planned to use Pearson correlation coefficients with 2-tail tests for testing relations between psi success and the ratings of specific dimensions. We planned to use multiple regressions to help clarify what relations were most pertinent to psi expression and in what direction. We framed the hypothesis that these measures would predict ESP scoring at the time we began collecting them. We made ratings of group process at the end of the session, but before displaying pictures for rating. Group means were calculated later for each session variable.

Measures. At session 136, the group decided to add pre-session ratings of mood to our procedure. Before beginning each session, each member present filled out a Nowlis Mood-Adjective List, Short-Form (Nowlis, 1965). This is a quickly administered list of 33 adjectives that yields scores on 11 dimensions of mood: Aggression, Anxiety, Surgency, Elation, Concentration, Fatigue, Social Affection, Depression, Egotism, and Vigor. Based on prior research (Carpenter, 1991) and general findings in the literature (e.g., Palmer, 1977), we expected that pre-session moods of anxiety and skepticism would be negatively related to psi scoring. We framed this hypothesis just before beginning the collection of mood data. Because no work on mood and ESP in group settings has been reported before, we ventured no predictions on other dimensions of mood but intended to analyze them as well in an exploratory, hypothesis-generating way. Mood ratings were collected for 221 sessions.

After this project was completed, some other measures involving the data were selected, and analyses involving those measures carried out. These measures were: 1. The level of global geomagnetic activity for the time periods of the sessions, as well as the periods immediately preceding and following them, 2. The average ESP *extremity score* for each session, independent of hitting or missing scoring direction, 3. The emotional negativity of each of the 400 target pictures used in the study. Since each of these measures involves issues that are secondary to the primary concerns of this study, each of them will be reported upon separately in later reports.

Hypotheses

1. Based upon the success of pilot sessions, the group's average ranks of association between targets and sessions were expected to show significant psi-hitting. This hypothesis was posed at the inception of the project.
2. Ratings of session quality were expected to relate meaningfully to hitting.
3. Based upon prior research, pre-session moods of Anxiety and Skepticism were expected to predict psi-missing, as tested by Pearson r ; one-tailed probabilities.
4. We report some descriptive analyses in order to permit a qualitative sense of the sessions.

Results

Descriptive Analyses

1. Quality of Sessions. The means of the various dimensions, including those less-often rated, are given below in order of mean values. Meetings tended to be experienced positively, with high levels of connectedness, meaningfulness, and engagement, and relatively little conflict and hurtfulness.

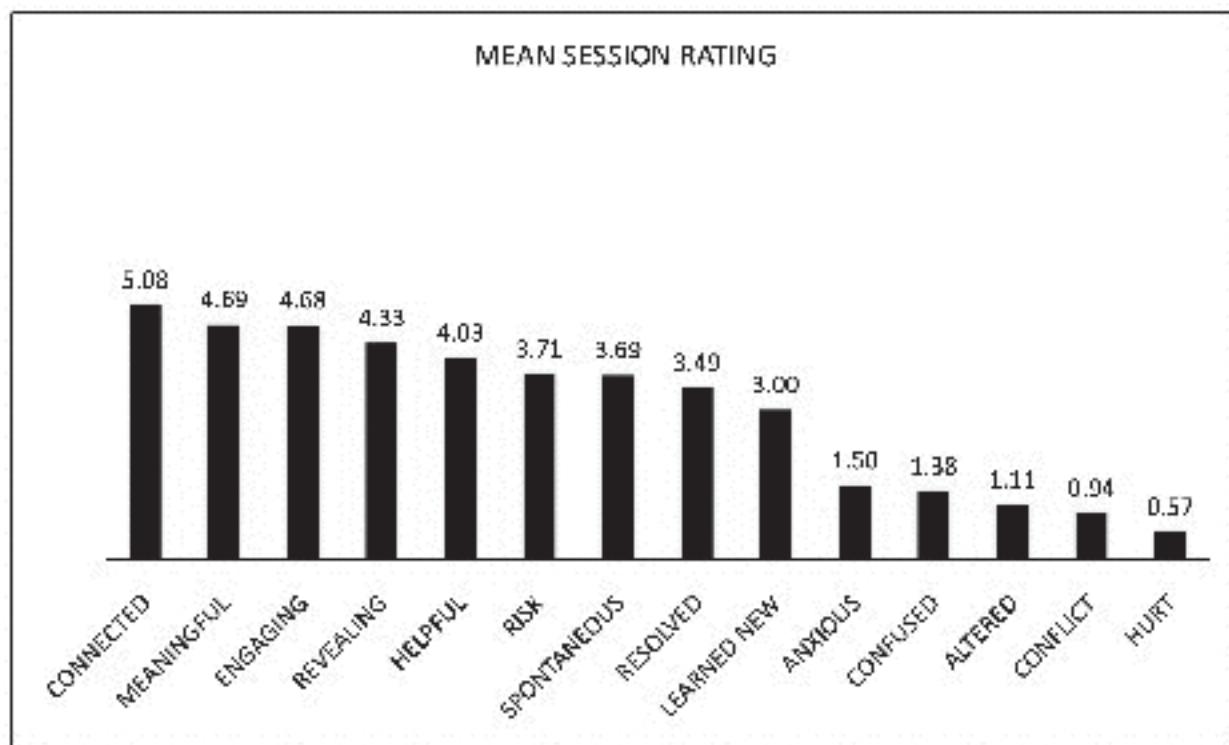


Figure 1. Averaged Ratings of Session Quality

Ratings on the more-often rated dimensions were all positively correlated, most of them fairly strongly so. Only *Anxious* and *Hurtful* were unrelated to the other dimensions, and they were most strongly related to each other. See Table One for the matrix of correlations among the primary measures.

Table 1

Intercorrelations of Session-Quality Ratings

	Meaning	Engage	Connect	Rev	Risk	Spont	Anx	Hurt
Engage	.85							
Connect	.65	.71						
Rev	.79	.75	.61					
Risk	.65	.62	.49	.80				
Spont	.64	.67	.48	.70	.71			
Anx	.15	.14	.08	.25	.28	.24		
Hurt	.07	.09	.002	.16	.17	.16	.42	
Help	.70	.69	.59	.58	.58	.48	.09	.11

Note: Meaning = meaningful, Engage = engaging, Connect = connected, Rev = revealing, Risk = risk taken, Spont = spontaneous and surprising, Anx = anxious, Hurt = hurtful, Help = helpful.

2. Average pre-session mood. Members approached sessions in moods marked by warmth and seriousness, moderate energy, and relatively low levels of negative affect, as shown in Figure 2. Scores could range from 0 to 9.

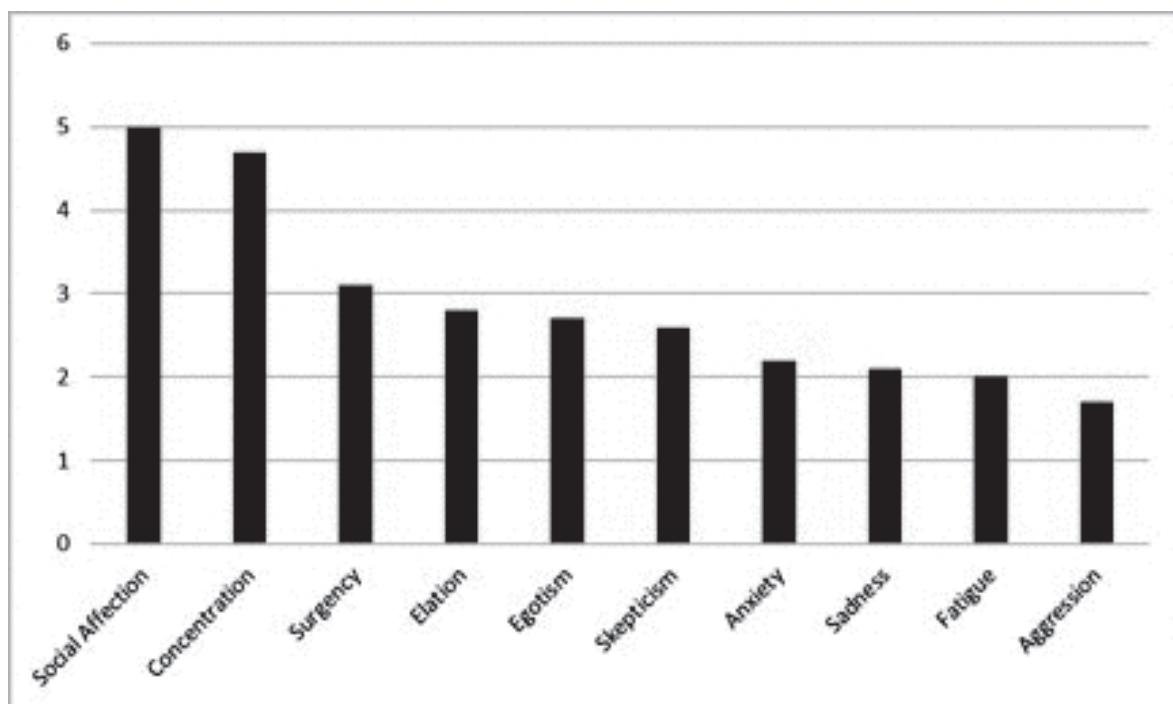


Figure 2. Average Pre-session Mood

Hypothesis-testing Analyses

1. Overall Hitting and Missing. Altogether, 225 binary hits and 160 misses were observed. This 58.4% hit rate is significant, $X^2(1) = 11.00, p = .001, r = .17$.

In an exploratory analysis we examined the data to see if this overall hitting tendency changed over time. When the life of the group is broken up into three epochs described earlier (A, B, and C), no change in hitting rate was observed, $X^2(2) = .26, p = .88$. As another test for a linear

change over time, a correlation was computed between z scores and year, Pearson's r ($df = 384$) = $-.03$, $p = .63$. For those concerned with security (or interested in the effect of distance on psi), it might be worth noting that the efficiency of the effect did not decline when several miles were interposed between the act of target selection and the group session, when Epoch B ended and C began.

2. Relations between Psi and Session Ratings. The 9 rating dimensions for session quality are referred to briefly as *meaningful, engaging, connected, revealing, risk, spontaneous, anxious, helpful, and hurtful*.

All the correlations between session ratings and ESP were negative, three were significant by a 2-tailed test: Meaningful, Connected and Revealing (see Table 2).

Table 2

Process Ratings and ESP Success

Variable	<i>r</i>	<i>p</i>
Meaningful	-.11	.04*
Engaging	-.09	.09
Connected	-.11	.05*
Revealing	-.13	.03*
Risk	-.05	.15
Spontaneity/surprise	-.08	.15
Anxiety	-.08	.15
Hurt	-.07	.20
Help	-.04	.54

Because the relations given in Table 1 are somewhat redundant due to the intercorrelation of the variables, we placed the three that showed independently significant relations into a stepwise multiple regression analysis as predictors of the averaged session z scores. Only *Revealing* emerged as an independent predictor. We examined the relation between ESP and Revealing further by comparing different ratios of hitting-to-missing sessions at different levels of Revealing. We divided sessions by scores on Revealing into three sets: the lowest fourth, the middle half, and the highest fourth. Scoring was highest when Revealingness was lowest (62.7 % hits), still positive but less so when it was middling (60.5 %), and near chance (51.2%) when it was high.

3. Psi and Pre-Session Mood. Both pre-session ratings of Mood/Anxiety (as opposed to session-quality Anxiety) and Skepticism were predicted to show a negative relation to psi, and both expectations were confirmed with small correlations, Anxiety, r (209) = $-.12$, $p < .05$; Skepticism, r (209) = $-.11$, $p < .05$. The other mood/psi relations were examined in an exploratory way, using two-tailed tests, but none approached significance.

Qualitative Examples of Hitting Sessions

Our measures tell some of the story, but there is also the question of how psi-expression in this situation is qualitatively experienced. We offer descriptions of a few sessions that produced hits. In one session early in the life of the group, two men who had been old friends but whose

lives had grown apart reflected on the years in which they had been close and the issues that had led to their distance. As the talk proceeded, there was a sense of resolving some old problems and reanimating an important relationship. They reminisced at length about a college hangout where they had spent many happy hours with friends. The target that day was of a seedy café that looked much like that place that the two had frequented together.

Two women who had become quite important to the rest of the group discussed in another session how they would be stopping soon. Some conflict between them had been part of their decision to stop, but that was largely now resolved. This led, however, to two other members revealing their built-up resentment with the first author, for his non-directive approach to group leadership. This exchange led to an airing out of conflict between the leader and one other member that they had been unable to deal with before. By the session's end they were embracing in light of the new understanding they had created. Everyone then addressed again the issue of the departing members, in a spirit of deep affection and appreciation. The target that day was a picture of two children walking away down a railroad track. Everyone rated it highly, but some for different reasons. Some thought of the children as the departing members, while others associated the children to the first author and his prior antagonist, now heading off to play.

A younger man discussed his feelings toward an older male member in an early session. He was urged to explore, in a gestalt therapy way, his responses to the man, which included admiration, affection, and intimidation. This gestalt exercise led, as they often do, to a series of behaviors that were unusually spontaneous and impetuous. At one point he stood facing the older man when he was urged to "do something now!" He said, rather out of the blue, "I want to rub your bald head." Then he stood behind the older man and did just that, talking about the feelings that emerged from his surprising choice. The target that day was a drawing of a bull in a china shop, with a shiny check-mark on the top of its head. The father-like bull, the shiny, check-marked head, and the sense of reckless behavior all resonated to the session and permitted an easy identification.

The most striking material of another meeting involved one man talking with exuberant animation about resolving a grinding, longstanding conflict with his stepson. This event included successfully asserting both his love and his authority to a new, very satisfying degree. As the group cheered, another member called out, "You're a champ!" The target that day was a triumphant picture of an athlete receiving a trophy before a large crowd. Another easy identification.

In another session fairly late in the life of the group we talked about death, age and loss, and discussed various memories of disappointments with sadness and humor. The target picture that day was of two people standing in a ruined room ravaged by floodwaters. Although this congruity is subtler than the other examples, it was also more typical, in that associations tended to rely upon general tone and theme more than specific dramatic events.

In general, the group came to experience the target, not as influencing our process so much as being a relatively successful or unsuccessful *illustration* of our process. We felt we were doing whatever we wanted and needed to do, and came to expect that the target would frequently cooperate by giving us a decent representation of the situation we developed. In parapsychological terms, the associations we found seemed subjectively more like a PK effect than an ESP effect, as if the group's process had influenced the random target-selection process. Since our targets were determined by a pseudo-random number queue standing in a computer circuit, this possibility seems unlikely.

Discussion

In this section we go beyond the tentative ideas with which we initiated the project and discuss the findings as if first sight theory had been formalized already. This will allow us to illustrate how hypotheses may be drawn from FST and tested in data such as these. We discuss the major analyses in turn.

Overall Effect

FST proposes that each person continuously makes unconscious reference to an extended surround of meaning and expresses this reference implicitly in constructing experience and making behavioral decisions. Sometimes the psi reference is positive (included in experience and behavior) and sometimes negative (excluded). This expression is assumed to always be implicit, and its direction is determined by unconscious intention in the context of the situation in the moment. Its expression may be seen by examining the meanings inadvertently implied by experiences and actions.

FST assumes that, in general, patterns of functioning found to characterize “normal” preconscious functioning should tend to apply to psi functioning as well. For example, it is known that subliminal sensory perceptions may prime emotions, choices and behavioral tendencies, and we expect that a pertinent extrasensory target could have the same effect. This is why we expected that we would express the pictures that served as our targets in this study by our spontaneous behavior. In fact, we did seem to do that. To take the examples cited in turn, the seedy café may have primed a sense of nostalgia over lost friendship in the two former friends and facilitated their taking up the issue in the group. The prime of two children walking away hand-in-hand may have implicitly reminded the antagonists of their deep regard for one another and encouraged them to work through the conflict that they had neglected up to that point. The impetuous bull prime may have facilitated an unusually spontaneous symbolic gesture on the part of the normally constrained man who rubbed the other’s bald head. The prime of the cheering crowd may have implicitly reminded the man who had successfully worked through something with his stepson and enjoyed the victory, that he would enjoy telling the story to the group. And the subtle prompt provided by the storm-ruined room facilitated sensitivity to personal themes of loss. According to FST, this is how the mind employs extrasensory information all the time as an aid to unconsciously constructing experience and behavior as it is most needed in that moment.

Although we identified the targets a significant proportion of times, we also misidentified it frequently. The various corollaries of FST specify hypotheses about variables expected to affect the direction (positive or negative) of psi expression. In general, FST expects a positive psi reference when the meanings to be apprehended are important to the individuals and when expressing the information is congruent with their goals in the situation, when the people involved are creative and are comfortable using unconscious sources of information, when they think of psi as a valid source of information, when they are not frightened, and when their activity is playful rather than cognitively arduous. Since these things are all generally true of this group situation, it should be conducive to positive expression of psi meanings.

Initial Mood

Of the eleven dimensions of the Nowlis scale, two were expected to relate to scoring based on previous research, and both were drawn from FST, which holds that a state of anxiety should

make psi-missing likely. FST also asserts that the participants' understanding that psi represents a valid source of information will tend to promote psi-hitting, whereas the contrary belief will switch scoring in a negative direction. We reasoned that in the context of this study, endorsement of the mood items assessing *Skepticism* should predominantly imply a skeptical feeling toward our ESP task.

At the time the mood hypotheses were first posed for this study, they were drawn inductively from past research (e.g., Lawrence, 1998; Palmer, 1977, Schmeidler & McConnell, 1958) on psi performance in relation to the "Sheep-Goat" dimension and various measures of anxiety. FST has incorporated these observations and framed them in terms by which they can be understood, and it can be specified more precisely in what contexts they are expected to be reliably present and in what contexts they are not.

Session Ratings

Our initial guess, that hitting might be better when sessions showed more intense process (meaningful material, self-disclosure, risk, and confrontation), was based on an analogy to experiential psychotherapy and proved to be wrong. We thought that more intensely probing process might yield more extrasensory access, although without empirical background, so we did not venture directional predictions, and as the group proceeded the wisdom of that grew clearer. Had FST been formalized at that time, the expectation would have been different. FST assumes that the mind will unconsciously orient toward whatever it senses to be most important and useful in the moment in the light of unconscious intentions, and expresses this implicitly, while avoiding less salient alternatives. At interpersonally intense and sensitive times, as indicated by high levels of Revealing, the targets should become relatively unimportant and less alluded to by group process. Although analyses of the individual correlations with session qualities were not corrected for multiple selection, we think that the multiple regression gives assurance that the relation with Revealing is genuine. In any case, without prior predictions, we regard this finding as exploratory.

As the group proceeded, it occurred to participants that the idea that we were testing something analogous to psi in psychotherapy was incorrect in one important respect. All the observations of apparent psi in psychotherapy refer to material that is emotionally pertinent to the therapeutic concerns, such as traumatic memories, important secrets, and unconscious emotional reactions to other parties in the therapy (see, e.g., Eisenbud, 1970, Mintz, 1983). In this study our ESP task required us to express information that was not primarily personal, but determined randomly and carried by arbitrary pictures. In more intense sessions, our therapeutic and our experimental tasks came into conflict. It came to subjectively seem to us that during particularly intense sessions our psi was still active, but it shifted to the important personal issues that were ongoing, for example by sharpening our empathy for personal concerns that might be difficult to articulate, as opposed to the impersonal material in the target pictures. This would be consistent with the anecdotes of apparent psi spread across the psychotherapy literature, but we have no measure of this possible interpersonal deployment of psi in this study, so this must remain as a good question for future research. However, we can examine the effect on target-related psi of changes in interpersonal intensity. In this case, as the focus on personally sensitive disclosure increased, scoring declined.

We have confirmed the expectation of first sight theory that extrasomatic information may be expressed implicitly in spontaneous social interaction and then recognized as such after the fact, given the underlying wish of the members to generate allusions to the targets. Someone wishing to

replicate this effect might choose to use a group situation without an explicit therapeutic agenda. FST holds that unconscious intention determines the direction of psi-expression, and therapeutic goals should sometimes put participants at cross-purposes regarding impersonal target material. Sessions that are playful, cheerful and spontaneous, with free-floating agendas that are not so intensely probing would be expected to best express psi. This implies an intriguing parallel to the work of Iris Owen and her collaborators who created the faux ghost "Philip" and observed his psychokinetic noises and levitations (Owen & Sparrow, 1967). They noticed that many of their best sessions were spontaneous and party-like, with "horsing around," singing and joking. We expect that for psi to be expressed in behavior (either of persons or things) a process characterized by uncritical playfulness and trust will work best.

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Abstracts in other Languages

French

Les comportements sociaux spontanés peuvent exprimer implicitement de l'information extra-sensorielle

Nous décrivons une nouvelle procédure pour accéder à l'expression implicite de l'information psi. Cette recherche est guidée par l'hypothèse que l'information psi peut inconsciemment influencer le développement des interactions sociales. Les membres d'un groupe quasi-thérapeutique participaient à des sessions non-structurées tandis qu'un expérimentateur, à distance, sélectionnait aléatoirement une cible de PES (une image). Immédiatement après chaque session, les membres du groupe évaluaient à l'aveugle la cible et trois images leurre quant à leur degré d'association avec la session qui venait de se dérouler. Les évaluations de chaque personne étaient indépendantes et globales, mesurant la congruence d'humeur, le contenu et les événements significatifs survenus durant la session qui pouvaient être mis en lien avec les images. Les évaluations moyennes fournissaient un score de PES par session. Un groupe de volontaires avec une base de membres évolutive s'est rencontrée de façon hebdomadaire sur une période de plusieurs années, accumulant 386 sessions (en excluant les essais pilotes prédéterminés). Globalement, le groupe fut capable d'associer correctement les processus spontanés du groupe avec les cibles correspondantes à ce jour à un degré significatif. Le groupe a également évalué les sessions selon plusieurs critères, tels que le risque, les bénéfices, les inconvénients, immédiatement après chaque séance et avant de voir les images du jour, et notèrent leurs humeurs avant le début de la session. Le groupe fut le plus en réussite dans la tâche d'expression et d'identification de la cible lorsque les sessions n'impliquaient pas de révélations personnelles trop intimes, et lorsque les membres démarraient les sessions avec des humeurs faiblement anxiuses ou sceptiques.

German

Kann spontanes Sozialverhalten implizit ASW-Informationen ausdrücken?

Wir stellen eine neue Methode vor, um den impliziten Ausdruck von Psi-Informationen zu erfassen. Diesem Forschungszugang liegt die Annahme zugrunde, dass Psi-Informationen auf unbewusste Weise die Entwicklung der sozialen Interaktion beeinflussen können. Mitglieder einer quasitherapeutischen Gruppe trafen sich zu unstrukturierten Sitzungen, während derer ein räumlich entfernter Experimentator ein ASW-Zielobjekt (ein Bild) zufällig auswählte. Unmittelbar nach jeder Sitzung nahmen die Gruppenmitglieder eine blinde Einstufung zwischen dem Zielobjekt und drei Kontrollbildern in Bezug auf den Grad der Übereinstimmung vor, die sich in der Sitzung entwickelt hatte. Die Einstufung jeder Person erfolgte unabhängig und global, wobei die Kongruenz

in Bezug auf Stimmung, Inhalt und bedeutsame Sitzungsereignisse zwischen den Sitzungen und Bildern eingeschätzt wurde. Gemittelte Einstufungen ergaben einen ASW-Trefferwert pro Sitzung. Eine Gruppe von Freiwilligen, die allmählich zu Mitgliedern wurden, traf sich wöchentlich über eine Zeitspanne von mehreren Jahren zu insgesamt 386 Sitzungen, wobei vorher festgelegte Pilotsitzungen ausgeschlossen wurden. Im Ganzen gesehen war die Gruppe in der Lage, die in ihr ablaufenden spontanen Prozesse mit den jeweiligen täglichen Zielbildern in einem signifikanten Ausmaß zu assoziieren. Die Gruppe stufte auch die Sitzungen in Bezug auf verschiedene Qualitäten wie Gefahr, Hilfsbereitschaft und Verletzlichkeit ein, und zwar unmittelbar im Anschluss an die Sitzungen und bevor das tägliche Bild betrachtet wurde, und stufte ihre Stimmung vor Beginn der Sitzung ein. Die Gruppe konnte dann das Zielbild am besten beschreiben und identifizieren, wenn während der Sitzungen nur wenig intimes Material preisgegeben wurde und die Einschätzungen der Stimmungen der Mitglieder in Bezug auf Angst und Skepsis gering waren.

Spanish

El comportamiento social espontáneo tal vez manifieste de manera implícita información Psi

Presentamos un nuevo procedimiento para acceder a la expresión implícita de la información psi. El supuesto de que la información psi puede influir inconscientemente el desarrollo de la interacción social guió esta investigación. Los miembros de un grupo quasi terapéutico realizaron sesiones no estructuradas mientras un experimentador distante seleccionaba aleatoriamente un objetivo Psi (una imagen). Inmediatamente después de cada sesión, los miembros del grupo clasificaron ciegamente el objetivo y tres imágenes de sueño según el grado de asociación con la sesión que acababa de terminar. Las calificaciones dadas por cada persona fueron independientes y globales, evaluando la congruencia con el estado de ánimo, el contenido, y los eventos de sesión significativos entre la sesión y las imágenes. Las calificaciones promedio arrojaron una puntuación Psi por sesión. Un grupo de voluntarios con miembros que podían cambiar se reunió semanalmente durante un período de varios años, acumulando 386 sesiones (excluyendo los ensayos piloto predeterminados). En general, el grupo pudo asociar correctamente sus procesos grupales espontáneos con los objetivos del día en un grado significativo. El grupo también clasificó las sesiones en términos de varias cualidades tales como riesgo, utilidad, y daño, inmediatamente después de la sesión y antes de ver las fotos del día, y calificó su estado de ánimo antes de comenzar la sesión. El grupo tuvo más éxito para expresar e identificar el objetivo cuando las sesiones no involucraban demasiadas auto-revelaciones íntimas y cuando los miembros comenzaban las sesiones con estados de ánimo bajos en ansiedad y escepticismo.

The Minimal Self and Belief in Paranormal Phenomena

Harvey J. Irwin¹

Abstract: A growing body of evidence suggests that in the general population the development of beliefs in paranormal phenomena relies in part on the cognitive processes involved also in the formation of delusions. One early sign of the development of delusions is a disorder of or vulnerability in the minimal self, an awareness that one's thoughts, perceptions and feelings are experienced by the self. This study sought to investigate the hypothesis that belief in paranormal phenomena may be associated with minimal-self dysfunction. The hypothesis was investigated with an online questionnaire survey of 141 Australian adults. Findings support the hypothesis and indicate also that the relation between minimal-self dysfunction and paranormal belief is partially mediated by schizotypal tendencies. These relations nevertheless are not strong.

Keywords: paranormal belief, minimal-self dysfunction, schizotypy, anomalous experiences

Recent empirical research has suggested that the development of belief in paranormal phenomena may be due in part to psychological processes that also underlie the formation of delusions. The aim of this study was to examine the contribution to paranormal belief by a reported early prelude to the development of delusions, a disturbance in a psychological characteristic known as the minimal self.

Before proceeding to the rationale for the study three crucial points need to be established for the benefit of readers. First, there is no assumption here that a delusion is necessarily false. Although falseness was originally proposed to be a defining feature of delusions (Jaspers, 1913, 1997) this condition is no longer required under contemporary clinical diagnostic criteria (American Psychiatric Association, 2013). Rather, delusions are now defined in terms of the manner of their formation. Other types of belief tend to be accepted after some critical rational analysis of available options and are subject to ongoing evaluation in light of subsequently encountered information. Delusions, on the other hand, have intuitive bases, are established with scant rational scrutiny of supportive evidence or of alternative explanations, and are relatively shielded from further critical reassessment (Coltheart, Langdon, & McKay, 2011; Connors & Halligan, 2015). Indeed, in many cases delusions are emotionally driven (Bortolotti, 2015; McKay & Kinsbourne, 2010), seemingly designed to serve some pressing psychological need with a minimum of cognitive effort. For these reasons delusions may often be false, but they are neither invariably nor inherently so. The hypothesis that popular paranormal beliefs may in part be delusional therefore does not negate the ontological reality of psi processes.

Second, the delusional origins of paranormal beliefs may well prove to be a tenable account for many members of the general population, but there may still be some groups of people for

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whom this is not the case. Most professional parapsychologists, for example, may have endorsed various beliefs in paranormal phenomena because they have undertaken a critical review of some of the empirical literature on psi experiments. Some people with a general interest in the paranormal may have read popular accounts of parapsychological research and have come to a similar considered conclusion. Self-identified professional psychics also may engage in a relatively rational analysis of propositions about the *modus operandi* of psi and may have consulted various authoritative esoteric texts. Again, some members of societies for psychical research, theosophical societies, or other esoteric groups may have given critical consideration to their reasons for believing in the paranormal, as may have people curious about spiritualism or mysticism. Now, several of these groups have been found to have a psychological profile that differs from that of most paranormal believers (McGarry & Newberry, 1981; Milton, 1992; Stone, 2016). Nonetheless, despite the existence of these “exceptions” I would argue that collectively the people in these categories still form a minority. The hypothesis of the delusion-like nature of paranormal beliefs therefore may yet hold for a substantial part of the general population.

Third, the fact that some people hold a delusional belief does not necessarily mean that they have a psychiatric disorder. Indeed, non-psychotic delusions are very common in the general population (e.g., Pechey & Halligan, 2011). The position now taken by most psychologists is that many symptoms of psychosis occur in various degrees and are distributed across the whole population (Claridge, 1997; Johns & Van Os, 2001; Nelson, Seal, Pantelis, & Phillips, 2013; Verdoux & Van Os, 2002), but they constitute a psychotic profile in only a small percentage of cases. Believers in the paranormal therefore are not being “pathologized” by the hypothesis that they have some psychological characteristics independently known to be found in more extreme forms among patients with psychosis. The fact that delusions and the processes underlying them need not be intrinsically pathological is essential to an appreciation of this study’s rationale.

With the foregoing caveats kept in mind, what is the evidence that the formation of paranormal beliefs in most people has something in common with that of (non-pathological) delusions? One level of support concerns personality characteristics. Schizotypy is a personality dimension relating to behaviors that are an attenuated form of schizophrenic symptoms and which are distributed across the general population. As these schizophrenic-like characteristics may be found at subclinical or benign levels among many people this personality profile has been dubbed the “happy schizotype” (McCreery & Claridge, 1995). Many studies have demonstrated that schizotypy is related both to paranormal belief (e.g., Goulding, 2005; Holt, Simmonds-Moore, & Moore, 2008; Irwin & Green, 1998-1999; Peltzer, 2003; Thalbourne, 1985) and to the interpretation of anomalous experiences as paranormal (Irwin, Dagnall, & Drinkwater, 2013; Schofield & Claridge, 2007). The domain of schizotypy, however, is multifactorial, and the cognitive-perceptual component of schizotypy (“unusual experiences”) appears to be particularly prominent as a correlate of paranormal belief (Bouvet et al., 2014; Hergovich, Schott, & Arendasy, 2008; Houran, Irwin, & Lange, 2001; Irwin & Green, 1998-1999). In addition, the fact that delusions are formed with little rational analysis of the evidence for them is paralleled by observations that paranormal belief is related to an intuitive style of thinking (e.g. Aarnio & Lindeman, 2005; Irwin & Marks, 2013; Irwin & Young, 2002; Marks, Hine, Blore, & Phillips, 2008; Sadler-Smith, 2011), a tendency to jump to conclusions (Irwin, Drinkwater, & Dagnall, 2014), and an insufficiency of reality testing (Dagnall, Drinkwater, Denovan, & Parker, 2015; Dagnall, Drinkwater, Parker, & Munley, 2010; Dagnall, Drinkwater, Parker, & Rowley, 2014; Drinkwater, Dagnall, & Parker, 2012; Irwin, 2003, 2004).

Underlying the formation of delusions are schizotypal cognitive processes (Garety & Free-

man, 1999; Garety et al., 2005) that have been empirically documented as key markers of proneness to delusions. Several of these cognitive processes have been shown to correlate also with paranormal beliefs; they include specific biases in reasoning such as emotion-based reasoning and catastrophizing; aberrations in the “salience network” of the cerebral cortex (the bilateral insula and anterior cingulate) that make some potential interpretations of an experience seem unusually salient; inferential confusion or the inclination to draw inferences on the basis of remote theoretical possibilities; proneness to confirmation bias or the neglect of disconfirming information; and distinctive metacognitive beliefs or attitudes towards one’s thinking, particularly the tendency to focus attention on thought processes (cognitive self-consciousness) and negative beliefs about thoughts concerning uncontrollability and danger (Dagnall et al., 2010; Drinkwater et al., 2012; Irwin, 2003, 2004, 2014; Irwin, Dagnall, & Drinkwater, 2012a, 2012b; Jones & Russell, 1980; Russell & Jones, 1980; Sparks & Pellechia, 1997).

The effect size of most of the above relations (as indexed by simple binary correlations) is small, but when considered collectively there is sufficient empirical evidence here to indicate the potential viability of the hypothesis that the formation of paranormal beliefs is due at least in some small way to psychological processes that also underlie the formation of non-pathological delusions.

A corollary of this hypothesis is that schizotypal cognitive processes arise before the emergence of clear delusional tendencies and indeed, in at least some instances this has been shown to be the case (e.g., Raij, Mäntylä, Mantere, Kieseppä, & Suvisaari, 2016). Further insight into the developmental stages of delusions may be found in recent research into so-called prodromal symptoms of schizotypy. *Prodromal symptoms* are specific or non-specific signs that may appear before the emergence of the recognized features of a disease or disorder. Long before symptoms of schizophrenia can be detected, for example, there may be some evidence of reduced cognitive functioning, a period of “prepsychotic disturbance” (Yung & McGorry, 1996, p. 353). Similarly, some commentators would deem early-onset schizotypal behaviors a prodrome of the development of schizophrenia or the less debilitating schizotypal personality disorder (Kwapil & Barrantes-Vidal, 2015; Moukas et al., 2010). Most importantly in the present context, prodromal symptoms may prove instructive in understanding the developmental stages of a disorder (Akroyd, 2013; Davidsen, 2009; Van Kampen, 2005).

In recent years some psychopathology researchers, particularly those in Europe who work from the tradition of a phenomenological viewpoint in psychiatry, have proposed that a condition known as a *minimal-self disorder*¹ may be a prodromal symptom of benign schizotypy, schizotypal personality disorder, and schizophrenia. The minimal self, basic self, experiential self, or “ipseity” entails a first-person perspective on the world, an appreciation of the self as the subject (as distinct from the object) of one’s perceptions, thoughts, and feelings (Nelson, Whitford, Lavoie, & Sass, 2014; Sass, Parnas, & Zahavi, 2011). As defined by Gallagher (2000, p. 15) the minimal self is “a consciousness of oneself as an immediate subject of experience”, and thereby it is much more rudimentary and unelaborated than the construct of self-concept which incorporates all manner of psychological complexities in how one sees oneself (see also Strawson, 2000). The following illustration of the minimal or experiential self is attributed to de Warren (2009, p. 19; cited by Martin et al., 2014): “when looking at this tree in my backyard, my consciousness is directed toward the tree and not toward my own act of perception. I am, however, aware of myself as perceiving this tree, yet this self-awareness (or self-consciousness) is not itself thematic”, that is, this consciousness of the self is “pre-reflective” (Nelson et al., 2014) or something which usually is known to

be present but is not being reflected upon at the time. The schizophrenia spectrum disorders are proposed to arise fundamentally from a disorder of or vulnerability in (Stanghellini & Rosfort, 2015) this minimal self (e.g., Parnas & Handest, 2003; Parnas & Henriksen, 2014; Sass & Parnas, 2007). At the same time it must be stressed that this dysfunction is deemed prodromal and is not a psychotic disturbance in its own right (Henriksen & Nordgaard, 2016). Consistent with their status as prodromal symptoms, disturbances in the minimal self may be evident from childhood or early adolescence (Henriksen & Nordgaard, 2016).

This approach is not entirely new. About a hundred years ago clinicians who studied schizophrenia maintained that a disturbance in the sense of self was a central factor in schizophrenic symptoms, but with the growth of a behavioral perspective in clinical diagnosis this phenomenological element was set aside in favor of overtly observable or “objective” factors (Akroyd, 2013; Sass et al., 2011). The re-emergence of a dysfunction of the minimal self as the essential core of benign schizotypy, schizotypal personality disorder and schizophrenia has invigorated the study of these conditions. Researchers are now exploring the mechanisms through which self disorder may eventually lead to the characteristic behaviors of benign schizotypy (Raballo & Parnas, 2011; Torbet, Schulze, Fiedler, & Reuter, 2015) and the recognized (so-called Schneiderian first-rank) symptoms of schizophrenia (Fuchs, 2015; Irarrázaval, 2015; Parnas, Carter, & Nordgaard, 2016; Sass, 2003; Sass & Byrom, 2015), including delusions. In essence, if people have a minimal-self disorder they may suffer a “source monitoring deficit”, an intermittent failure to “own” their perceptual experiences or fantasies as “mine”, and this allows all manner of intuitive interpretations of these experiences and of the nature of the physical and the social world (Nelson et al., 2014). Further, such people may fail to appreciate that they are in a position to make a rigorous assessment of the evidence for these interpretations.

Recent empirical studies have addressed the hypothesized link between minimal-self disorder and symptoms of both benign schizotypy and the schizophrenia spectrum disorders. A few researchers (Cicero, Martin, Becker, & Kerns, 2016; Warman, Lysaker, Luedtke, & Martin, 2010) have claimed confirmation of the relation based on a measure of self-concept, but as noted earlier, the psychological complexity of self-concept differs fundamentally from the construct of minimal self. Other investigations, on the other hand, provide more rigorous support for the link (e.g., Cascio et al., 2015; Torbet et al., 2015; Nordgaard, Revsbech, & Henriksen, 2015).

In summary, there are growing indications that the emergence of delusions in both clinical and non-clinical populations is related to the prodrome of minimal-self disorder.² To the extent that delusion-like processes do underlie the generation of paranormal beliefs within the general population, there may therefore be a relation between paranormal belief and the presence of a minimal-self dysfunction. Further, to the extent that minimal-self dysfunction is prodromal to schizotypy, and schizotypy in turn is predictive of paranormal beliefs, the foregoing relation may be mediated by the presence of schizotypal characteristics. The potential linkage between predictors of paranormal belief may be seen as an initial step in the construction of a model of at least one facet of the formation of paranormal beliefs. In other words, taken in conjunction the above relations provide an opportunity for a preliminary test of a broader view that the formation of paranormal beliefs relies in part on the cognitive processes also responsible for non-pathological delusions. The objective of the study therefore was to investigate the following hypotheses.

Hypothesis 1. For the general (non-clinical) population there is a positive relation between the intensity of paranormal beliefs and a dysfunction of the minimal self.

Hypothesis 2. The relation between minimal-self dysfunction and paranormal beliefs is mediated by schizotypal tendencies.

Method

Design

The project was undertaken as an online survey and run in conjunction with projects on other topics, the results of which are reported elsewhere (e.g., Irwin, 2017). The design of the project was approved by the host university's Human Research Ethics Committee (Approval no. HE16-172).

Participants

The survey was completed by a convenience sample of 141 Australian adults. There were 23 males and 117 females (plus one person who preferred not to disclose his or her gender), aged between 19 and 68 years ($M = 37.3$, $SD = 11.61$). All participants were recruited from a first-year Psychology class and received course credit for their participation. The researcher, a retired faculty member, conducted the study at a distance, so the interaction with the participants was limited to the Information Sheet at the beginning of the online survey; this page specified the nature and general objective of the survey, and gave the researcher's name and email address. Therefore, the participants had no direct knowledge of the researcher's interpersonal style, or other personality characteristics, expectations, or academic interests. The researcher is in general supportive of the psi hypothesis.

Materials

The survey inventory included three psychometric questionnaires plus a couple of items on demographic characteristics (age and gender). The questionnaires were the *Survey of Scientifically Unsubstantiated Beliefs* (SSUB), the *Inventory of Psychotic-Like Anomalous Self-Experiences* (IPASE), and the *Oxford-Liverpool Inventory of Feelings and Experiences (Short Form; O-LIFE)*.

The *Survey of Scientifically Unsubstantiated Beliefs* (SSUB; Irwin & Marks, 2013), labelled the "Survey of Popular Beliefs" for general use, is a 20-item self-report interval-level measure of the intensity of paranormal and related beliefs. Responses to the SSUB items are made on a 5-point scale (1 = Strongly disagree, to 5 = Strongly agree), with negatively worded items reverse encoded. The SSUB comprises two scales denoted New Age Beliefs (NAB, 15 items) and Traditional Religious Beliefs (5 items), but only the data for the former were used here. The NAB encompasses such New Age beliefs as telepathy, astral projection, fortune telling, psychokinesis, astrology, crop circles, haunted houses, shamanism, and the like. Scores on the NAB scale are computed as the sum of responses to the constituent items and then converted to scores with interval-level (Rasch scale) measurement using the conversion table provided by Irwin and Marks (2013, Appendix 3). Scores for NAB may range from 13.37 to 36.53, and were standardized by Irwin and Marks (2013) to have a mean of 25 and a standard deviation of 5.

Irwin and Marks (2013) have documented the dimensional purity and other psychometric characteristics of the SSUB, and generally these are sound. For example, the four-week test-retest coefficient for the NAB scale is satisfactory (.93; Irwin & Marks, 2013). In addition, the strong internal reliability of NAB items is attested by Irwin and Marks (2013; Cronbach's $\alpha = .92$), Irwin, Dagnall, and Drinkwater (2015; $\alpha = .89$), Irwin (2015a; $\alpha = .93$), Irwin (2015b; $\alpha = .91$), and Irwin,

Dagnall, and Drinkwater (2016; $\alpha = .92$). The SSUB is one of the few available interval-level measures of paranormal and related beliefs.

The *Inventory of Psychotic-Like Anomalous Self-Experiences* (*IPASE*; Cicero, Neis, Klaunig, & Trask, 2017) is a 57-item self-report questionnaire indexing aspects of the minimal self. Responses to each item are made using a 5-point scale (1 = Strongly disagree, to 5 = Strongly agree), and a total *IPASE* score is computed as the sum of responses over the 57 items. In addition, five subscales of the *IPASE* have been factorially identified. The subscales are labelled Cognition (7 items; anomalous experiences of one's own cognitions or thoughts), Self-Awareness and Presence (22 items; the experience that one's notion of the self is being altered), Consciousness (6 items; disturbances in conscious experience of reality), Somatization (17 items; disturbances in bodily sensations), and Demarcation/Transitivism (5 items; the existential feeling of nonexistence). Scores on each of the subscales are defined as the sum of responses to the constituent items in that scale. Cicero et al. (2017) document the *IPASE*'s congruent validity with its correlations with cognate measures. The internal consistency of the *IPASE* items is impressive for a general population sample (Cronbach's $\alpha = .97$ for the full scale, and .82 to .96 for the individual subscales), and similar statistics were obtained for a sample of schizophrenic patients and for groups defined by level and type of schizotypal symptoms. One drawback in the *IPASE* is that all of its items are couched in the same direction, with no negatively worded or reverse-coded items; this may make the questionnaire prone to participants' response sets (e.g., selecting the same response option for all items after carefully reading only the first few of them). The *IPASE* is also a very new scale, so there is a dearth of independent reports from which to assess its utility (but see Cicero, Klaunig, Trask, & Neis, 2016). Otherwise, the *IPASE* appears to be a well-constructed index of minimal-self dysfunctions and in any event, it is one of the very few such scales currently available (see also Parnas et al., 2005).

The *Oxford-Liverpool Inventory of Feelings and Experiences (Short Form)* or *O-LIFE* (Mason, Linney, & Claridge, 2005) comprises 43 binary (Yes/No) items designed to index schizotypy. The *O-LIFE*'s four scales are labelled Unusual Experiences (UE; 12 items), Cognitive Disorganization (CD; 11 items), Introverted Anhedonia (IA; 10 items), and Impulsive Nonconformity (IN; 10 items). Scores on each scale are computed as the number of items on which the respondent checks the aberrant option. The *O-LIFE*'s psychometric properties are well documented (e.g., Fonseca-Pedrero, Ortuño-Sierra, Mason, & Muñiz, 2015; Mason, Linney, & Claridge, 2005; Sierra, Rossier, Mason, & Mohr, 2016); thus, the scale's internal consistency is satisfactory (Cronbach's alpha = .78 to .87; Fonseca-Pedrero et al., 2015) and the measure's congruent validity has been demonstrated through correlations with other indices of schizotypy. As four of the items of the UE scale address broadly parapsychological or transpersonal experiences (e.g., "Do you think that you could learn to read other's minds if you wanted to?") there could be a potential confound in correlating UE scores with paranormal beliefs; a revised score (revUE) therefore was computed from the remaining eight items, yielding a total revUE score from 0 to 8.

Procedure

The project was administered as an online study compiled using *Qualtrics™ Survey Software* (Qualtrics Labs Inc., Provo, UT; see <http://www.qualtrics.com>). The stated aim of the project was "to survey various life experiences and relate them to aspects of your beliefs". People aged at least 18 years were said to be eligible to take part and they were assured their participation was anonymous and completely voluntary, with withdrawal from the exercise permitted at any time.

The need for frankness in responding was stressed. The system automatically prevented participation more than once by the same person.

After affirming their consent to take part in the project, participants completed the demographic items, followed by the *SSUB*, *IPASE* and *O-LIFE* questionnaires presented in a counterbalanced order. At the conclusion of the survey respondents were thanked for participating in the survey and were given the author's contact details in case they wished to learn about the study's findings when these became available.

Recruitment of participants was terminated at the end of the academic trimester in which the Psychology students were enrolled.

Results

Descriptive statistics for the principal variables of the study are given in Table 1. As the distribution of several variables was significantly skewed, bivariate relations between variables were indexed with Spearman correlation coefficients and are presented in Table 2. These correlations are provided purely as information; they were not used in the inferential statistical analyses.

Table 1
Descriptive Statistics for All Variables

Variable	<i>M</i>	<i>SD</i>	Range	Skewness (SE = .204)
Paranormal Beliefs <i>NAB</i>	22.82	3.16	13.37–29.19	-.89**
Minimal Self <i>IPASE</i>				
Cognition CGN	12.06	4.92	7–28	.91**
Self-Awareness and Presence SAP	42.94	16.99	22–97	.84**
Consciousness CNS	15.29	5.01	6–27	-.06
Somatization SOM	35.89	11.90	17–66	.38
Demarcation/Transitivism DT	8.50	3.44	5–19	.84**
Total	114.69	38.72	57–219	.56*
Schizotypy <i>O-LIFE</i>				
Unusual Experiences UE	4.13	2.73	0–11	.39
Revised Unusual Experiences revUE	3.16	2.01	0–8	.16
Cognitive Disorganization CD	5.08	3.30	0–11	.20
Introverted Anhedonia IA	2.99	2.27	0–9	.77*
Impulsive Nonconformity IN	3.31	2.23	0–9	.63*

Two-tailed tests, $df = 139$, with Bonferroni correction: * $p < .05$, ** $p < .01$

Hypothesis 1 proposed a positive relation between the intensity of paranormal beliefs and a dysfunction of the minimal self. The assessment of this hypothesis took into account the demographic factors of gender and age with which paranormal beliefs are known to vary to some degree (Irwin, 2009). A hierarchical multiple regression was performed with *NAB* as the criterion variable

and with gender and age (in Step 1) and *IPASE* Total scores (Step 2) as predictor variables. As the distribution of NAB scores was not normal the regression analysis was undertaken in conjunction with bootstrapping (1000 samples with bias corrected and accelerated analyses); bootstrapping is a procedure for using the original sample data to estimate a variable's distribution in the population and thereby circumvents the need to meet the statistical requirement for a normal distribution of variables (IBM Corporation, 2011). The regression equation after Step 1 was significant, $F(2, 138) = 5.71, p < .01$, adjusted $R^2 = .08$, with an independently significant contribution to the regression made by gender, partial $r(138) = .28$, beta = .28, $t(138) = 3.38, p < .001$. With the entry of *IPASE* Total in Step 2 the regression equation showed a significant change, $F(3, 137) = 9.72, p < .001$, adjusted $R^2 = .18$. Hypothesis 1 therefore is supported.

Table 2

Spearman Correlations across all Variables

Variable	CGN	SAP	CNS	SOM	DT	<i>IPASE</i> total	UE	revUE	CD	IA	IN
Paranormal Beliefs <i>NAB</i>	.32	.21	.16	.29	.22	.26	.42	.31	-.04	.02	-.01
Minimal Self <i>IPASE</i>											
Cognition CGN		.81	.62	.81	.81	.87	.41	.47	.35	.22	.35
Self-Awareness/Presence SAP			.72	.79	.86	.95	.38	.47	.51	.35	.46
Consciousness CNS				.73	.65	.81	.43	.49	.39	.35	.39
Somatization SOM					.78	.92	.50	.56	.42	.28	.45
Demarcation/Transitivism DT						.89	.34	.41	.47	.44	.36
Total							.46	.54	.48	.35	.46
Schizotypy <i>O-LIFE</i>											
Unusual Experiences UE								.94	.35	.12	.44
Revised UE revUE									.46	.20	.51
Cognitive Disorg. CD										.47	.58
Introverted Anhedonia IA											.33
Impulsive Nonconformity IN											

All coefficients of .27 or more are significant with $df = 139, p < .05$, Bonferroni corrected, two-tailed

To examine which of the individual *IPASE* factors contribute substantially to this relation the above analysis was repeated but with the five *IPASE* subscales as predictors in Step 2. With the entry of the *IPASE* factors in Step 2 the regression equation again showed a significant change, $F(5, 133) = 5.28, p < .001$, adjusted $R^2 = .23$, with the Cognitive subscale of the *IPASE* making an independently significant contribution, partial $r(133) = .25$, beta = .42, $t(133) = 2.95, p < .01$. Note, however, that collinearity (i.e., intercorrelations) among the *IPASE* factors may be an issue here; tolerance statistics were as follows: Cognition .28; Self-Awareness and Presence .19; Consciousness .39; Somatization .23; and Demarcation/Transitivism .22. These statistics may not be low enough to warrant exclusion of some *IPASE* factors from the analysis (Tabachnick & Fidell, 1996), but they are grounds for caution in drawing any inference that four of the *IPASE* factors did not contribute significantly to the prediction of NAB scores. These considerations notwithstanding, it is clear that Hypothesis 1 is supported: the intensity of paranormal beliefs is related to some

dysfunction of the minimal self.

Under Hypothesis 2 the relation between minimal-self disorder and paranormal beliefs is held to be mediated by schizotypal tendencies. The preceding analysis for Hypothesis 1 identified the Cognitive subscale of the *IPASE* as a key facet of minimal-self dysfunction in this context; in addition, previous research has shown the cognitive-perceptual component of schizotypy (UE) to be the *O-LIFE* factor most strongly predictive of paranormal belief (Bouvet et al., 2014; Hergovich et al., 2008; Houran et al., 2001; Irwin & Green, 1998-1999). Hypothesis 2 therefore was tested by examining the extent to which the relation between Cognitive *IPASE* and NAB scores is mediated by the *O-LIFE* revUE factor. An assessment of this mediated relation used the PROCESS add-on software for SPSS (Hayes, 2013).³ The output of these analyses was as follows.

The relation between *IPASE* Cognition and revUE was significant, $b = 0.21$, $SE = 0.03$, $p < .001$.

The relation between revUE and NAB was of borderline significance, $b = 0.28$, $SE = 0.14$, $p = .0512$. Given that the link between paranormal beliefs and the “unusual experiences” component of schizotypy is well documented in the literature it is reasonable to apply a one-tailed test here; under this criterion the relation between revUE and NAB is taken as significant.

The total relation between *IPASE* Cognition and NAB was significant, $b = 0.22$, $SE = 0.05$, $p < .001$.

The direct relation of *IPASE* Cognition and NAB was significant, $b = 0.16$, $SE = 0.06$, $p < .01$.

Finally, bootstrapping analyses suggests that there was a significant indirect (mediated) link between *IPASE* Cognition and NAB, $b = 0.06$, 95% CI = [0.00, 0.13]. As indicated above, the relation between these two variables can be broken down as follows⁴: total effect 0.219; direct effect 0.160; indirect effect 0.059.

The above output satisfies the criteria for (partial) mediation (Hayes, 2013). The relation between minimal self and paranormal beliefs therefore is significant when “unusual experiences” is treated as a mediating factor. Hypothesis 2 is supported, but with the rider that the mediation is partial rather than complete.⁵

Discussion

Hypothesis 1 posited a relation between the intensity of paranormal beliefs and the characteristics of a dysfunction in the minimal self. The associated multiple regression analysis confirmed that the set of minimal-self characteristics indexed by the *IPASE* statistically predicted the intensity of paranormal beliefs addressed by the NAB. Further, the contribution of the *IPASE* Cognitive subscale to the regression was independently significant. Now, the Cognitive subscale concerns anomalous experiences of one’s own cognitions or thoughts; these experiences are deemed anomalous because they show a source monitoring deficit, a failure of the person to recognize ownership of his or her cognitions. According to Cicero et al. (2017) examples of this anomaly include “experiences like thought interference, silent thought echoes, spatialisation of cognitive experiences (e.g., thoughts occupying a space in the real world outside of the head), disturbances in intentionality, and an altered experience of time” (p. 14). These disturbances represent the very heart of minimal-self dysfunction, and thereby it may be particularly instructive that this factor emerged as a key *IPASE* predictor of the endorsement of paranormal beliefs. In other words, some people in the

general population may have an intermittently dysfunctional minimal self and thus on occasion they may feel as if their perceptual experiences and imaginal experiences are not their own; this source-monitoring deficit then admits the possibility of interpreting experiences intuitively and of forming paranormal views of the nature of the physical and the social world. Note, however, this vulnerability of the minimal sense of self (at least, as indexed by the *IPASE*) appears to constitute more a sense of detachment rather than the comprehensive self disorder deemed to underlie the development of dissociative disorders or clearly psychotic delusions (Cardeña & Gleaves, 2007). In other words a minimal-self dysfunction in this context is not necessarily pathological. The findings for Hypothesis 2 take this relation a little further by suggesting that the link between minimal-self dysfunction and paranormal beliefs is partially mediated by schizotypal tendencies. This interpretation of the findings is consistent with the view of minimal-self disorder as a prodrome of the development of schizotypy which in turn may foster an inclination to jump to conclusions and an insufficiency of rigorous reality testing in the endorsement of paranormal beliefs. Again, note that the mediated relation between minimal-self dysfunction and paranormal beliefs is not as potent as the direct link between these two variables. In other words, even if a minimal-self dysfunction has not (or has not yet) sparked discernible schizotypal traits the vulnerability of the minimal self in its own right may be sufficient to facilitate paranormal beliefs.

Taken in conjunction with previously established links between schizotypal cognitive processes and paranormal beliefs this study offers some degree of support for the general view that the formation of paranormal beliefs may sometimes engage the cognitive processes that also underlie the formation of delusions, even if the outcome of such processes here is not in itself pathological. The endorsement of this account nevertheless must not be overly enthusiastic, given the small effect sizes of the relations identified here. Basically speaking there are four matters that warrant consideration in this regard.

First, the low effect sizes both in this study and in relevant previous studies may suggest that the apparent role of schizotypal cognitive processes is simply an artefact of some more pivotal psychological factor in the formation of paranormal beliefs. An intuitive-experiential thinking style, for example, is a documented correlate of paranormal belief (e.g. Aarnio & Lindeman, 2005; Irwin & Marks, 2013; Irwin & Young, 2002; Marks et al., 2008; Sadler-Smith, 2011), and perhaps so-called schizotypal cognitive processes are merely a non-clinical instance of this thinking style. Another candidate for an artefactual account may be the trait of fantasy proneness (e.g., Irwin, 1991). On the other hand, relations between paranormal beliefs and these variables are generally no stronger than those for delusion-related processes. This makes the argument for an artefact rather less compelling. Further, the diversity of delusion-related processes reported to correlate with paranormal belief may be taken as an indication that they are not mere artefacts of something more fundamental.

A second issue relates to dissociative phenomena. Although none of the major proponents of the concept of minimal-self dysfunction have linked this notion to dissociative processes it could well be argued that this dysfunction may fairly be defined in terms of a *dissociation* of the minimal sense of self from perceptual, ideational, and emotional acts. More important in the present context, the items of the *IPASE* seem to address dissociative events, even if this theme is specific to dissociation of the minimal sense of self. These considerations raise the possibility that the relations educed in this study can be accommodated by a broader model in which minimal-self dysfunction is replaced by dissociative tendencies as more generally conceived. Certainly there is scope for further empirical investigation of a possible relation between dissociative tendencies

and paranormal belief that is mediated by schizotypal processes. The feasibility of this model is consistent with previous observations of positive bivariate correlations between each pair of the key variables, namely, dissociative tendencies, schizotypal characteristics, and paranormal belief (e.g., Hergovich et al., 2008; Houran et al., 2001; Irwin, 1994, 1998; Rattet & Bursik, 2001). On the other hand, whereas there is a cogent conceptual and empirical rationale for a link between minimal-self dysfunction and schizotypy (see *Introduction*), previous work on the association between dissociative tendencies and schizotypy has failed to identify the origins of this association or even the direction of any underlying putatively causal mechanism (Irwin, 1998, 2001). Researchers seeking to subsume minimal-self dysfunction into dissociative tendencies in this context will therefore have to undertake some preparatory theoretical work. The phenomena of human attachment may well be relevant here (e.g., see Marcusson-Clavertz, Gušić, Bengtsson, Jacobsen, & Cardeña, 2017).

Third, it may be argued that minimal-self dysfunction, schizotypal anomalous experiences, and paranormal beliefs would constitute only a very skeletal model of one aspect of the formation of paranormal beliefs. Perhaps a more potent model would include additional factors independently known to underlie these three factors and their interrelationships. Stressful life events (e.g., childhood trauma) are reported to be conducive to minimal-self dysfunction and schizotypy (e.g., Ataria, 2014; Berenbaum, Thompson, Milanak, Boden, & Bredemeier, 2008; Rössler, Ajdacic-Gross, Rodgers, Haker, & Müller, 2016), as well as being a correlate of paranormal beliefs (e.g., Irwin, 1992); the addition to the model of a history of trauma therefore may be advantageous. Again, as noted in the Introduction, the model is acknowledged to be less applicable to some specific groups in the population, so an attempt to improve the fit of the model could be made with this fact in mind. Perhaps the inclusion of a habitual rational-analytical thinking style as a component would help to take the focus of the model away from these exceptional groups. The model allows for interactions of the above factors with character traits.

Finally, the low effects sizes serve to remind us that taking account of schizotypal processes will only ever accommodate one small facet of the formation of paranormal beliefs. Comprehensive surveys of the correlates of these beliefs (Irwin, 2009) suggest there are many types of variables that are found to predict the intensity of paranormal belief. If the major part of the variance in paranormal belief scores is to be explained it may be necessary to include in a more comprehensive model such factors as other aspects of personality, psychological development, motivation, avenues of cultural transmission, and psychodynamic functions.

Some methodological limitations of the study must be acknowledged. The use of a group of Psychology students as participants may have become routine in psychological research, but as this study explicitly sought to examine how paranormal beliefs are formed in the general population the representativeness of my sample is open to question. Replication of the study with a more diverse group of participants therefore would be appropriate. Another consequence of relying on Psychology students as participants is that women tend to predominate in such samples. Indeed, the small number of men in this sample is even more exaggerated than usual. If the role of gender in the formation of paranormal beliefs had been of primary interest the recruitment of more men would certainly have been necessary. Some readers may have concerns also about the reliability of data elicited through an online survey (but see Göritz & Schumacher, 2000). Finally, as the design of the study was correlational, inferences about underlying causal processes warrant experimental scrutiny.

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Notes

- 1 A common practice in the literature is to refer to this condition as a “minimal self-disorder”. This expression, with the displaced hyphen, could well be taken to signify a minimal disorder of the self rather than a disorder of the minimal self. To stress that the latter interpretation is intended I use the term “minimal-self disorder” or “minimal-self dysfunction” throughout this paper.
- 2 Despite this evidence, official diagnostic criteria for schizophrenia (American Psychiatric Association, 2013) still make no reference to anomalies of the self.
- 3 I acknowledge with gratitude the contribution by Gary Chan in running this PROCESS analysis in accordance with my criteria.
- 4 The use of the term “effect” here is standard statistical shorthand in reporting regression analyses. Nonetheless, I openly acknowledge that the data are correlational and therefore the reference to the relations in terms of “effects” and “effect sizes” is somewhat gratuitous.
- 5 The use of the term “effect” here is standard statistical shorthand in reporting regression analyses. Nonetheless, I openly acknowledge that the data are correlational and therefore the reference to the relations in terms of “effects” and “effect sizes” is somewhat gratuitous.

Abstracts in other Languages

French

Le Soi minimal et la croyance aux phénomènes paranormaux

De plus en plus d’éléments empiriques suggèrent que, dans la population générale, le développement des croyances aux phénomènes paranormaux s’appuient en partie sur les processus cognitifs

impliqués également dans la formation des délires. Un signe précoce du développement des délires est un trouble ou une vulnérabilité dans le Soi minimal, la conscience que nos pensées, perceptions et sentiments sont vécues par le Soi. Cette étude cherche à étudier l'hypothèse d'une dysfonction du Soi minimal associée à la croyance aux phénomènes paranormaux. Cette hypothèse a été étudiée grâce à un questionnaire en ligne sondant 141 adultes australiens. Les résultats soutiennent cette hypothèse et indiquent également que la relation entre la dysfonction du Soi minimal et les croyances paranormales est partiellement médiatisée par des tendances schizotypiques. Ces relations ne sont néanmoins pas très fortes.

German**Das minimale Selbst und der Glaube an paranormale Phänomene**

Es gibt zunehmend Hinweise darauf, dass in der allgemeinen Bevölkerung die Entwicklung des Glaubens an paranormale Phänomene teilweise auf kognitiven Prozessen beruht, die auch bei Wahnvorstellungen eine Rolle spielen. Ein frühes Zeichen für die Entwicklung von Wahnvorstellungen ist eine Störung oder Vulnerabilität des minimalen Selbst, ein Gewahrwerden davon, dass Gedanken, Wahrnehmungen und Gefühle durch das Selbst erfahren werden. Die Studie versuchte die Hypothese zu untersuchen, dass der Glaube an paranormale Phänomene mit einer Dysfunktion des minimalen Selbst einhergeht. Die Hypothese wurde mittels eines online-Fragebogens untersucht, den 141 australische Erwachsene ausgefüllt hatten. Die Ergebnisse unterstützen die Hypothese und weisen auch darauf hin, dass die Beziehung zwischen der Dysfunktion des minimalen Selbst und dem Glauben an Paranormales teilweise durch schizotypische Tendenzen vermittelt ist. Diese Beziehungen sind jedoch nicht stark.

Spanish**El yo mínimo y la creencia en los fenómenos paranormales**

Un creciente cuerpo de evidencia sugiere que en la población el desarrollo de creencias en fenómenos paranormales depende en parte de procesos cognitivos implicados también en la formación de delirios. Un signo temprano del desarrollo de delirios es un trastorno o vulnerabilidad en el yo mínimo, la conciencia de que los pensamientos, percepciones, y sentimientos propios son experimentados por el yo. Este estudio investigó la hipótesis de que la creencia en los fenómenos paranormales puede estar asociada con la disfunción mínima del yo. La hipótesis se investigó con una encuesta en línea con 141 australianos adultos. Los resultados apoyan la hipótesis e indican también que la relación entre la disfunción del yo-mínimo y la creencia paranormal está mediada parcialmente por las tendencias esquizotípicas. Estas relaciones, sin embargo, no son fuertes.

Book Reviews

EXTRA SENSORY PERCEPTION: SUPPORT, SKEPTICISM, AND SCIENCE. VOLUME 1: HISTORY, CONTROVERSY, AND RESEARCH, edited by Edwin C. May and Sonali Bhatt Marwaha. Santa Barbara, CA: Praeger, 2015. Pp. xvii + 411 (hardcover). \$131.00. ISBN 978-1-4408-3287-1

Extrasensory Perception. Support, Skepticism, and Science. Volume 1: History, Controversy, and Research provides an overview of avenues of current research on psi as well as those areas that probe non-psi territory, such as anomalistic psychology (why people may have mistaken impressions of witnessing psi and other phenomena), some relevant philosophy, and a skeptical criticism of the research. You will not find meta-analyses for each psi topic as in other books (Cardeña, Palmer, & Marcusson-Clavertz, 2015; Radin, 1997, 2006, & 2013), but you will obtain an understanding of the statistical issues, confounding problems, and contemporary lines of research in ESP studies.

Chapter 1, “The Fundamentals of Psi”, by Edwin C. May and Sonali Bhatt Marwaha, provides an introduction to research on what is variously called “psi”, “ESP”, “and anomalous cognition”. These terms are not fully interchangeable because psychokinesis is included in “psi” but not “ESP”; regardless, the authors of the two volumes switch use of terms, hopefully in a manner not confusing to the reader. Chapter 1 gives an overview of the major scientific questions posed by psi, *assuming psi is real*. The contrary view to this assumption is given in Chapter 6, otherwise, the chapter is a good overview of the challenges researchers are tackling but does reflect the opinions of May and Marwaha, especially the primacy of precognition as an explanatory problem over telepathy and clairvoyance and a skepticism of ontological dualism, especially aimed at arguments in favor of survival of consciousness.

Chapter 2, “A Brief History of Psi Research”, by Nancy L. Zingrone and Carlos S. Alvarado, reviews the development of parapsychology from its origins in the mysticism of antiquity. In the same way that modern astronomy developed from astrology or modern chemistry from alchemy, a line can be drawn from the mystical practices of the ancient world to the modern era when scientists began to approach psi phenomena quantitatively using the scientific method. Zingrone and Alvarado trace this path through the oracles of the ancient world to the practice of mesmerism, the rise of Spiritualism, and the development of statistical methods started by Rhine and continuing to this day. Especially since many older practices are still with us (there are many Spiritualist churches operating even to this day, for example), it is important for people working in psi research to understand the long history of the field. It is very hard to do justice to the full history of psi in a single chapter but Zingrone and Alvarado do a good job of giving a clear summary.

Chapter 3, “Mind and Knowledge at the Margins: On the Possible Revitalization of Research on Mind and Knowledge through a Reunion between Philosophical and Psychical Research”, by Anand Jayprask Vaidya begins with a discussion of the classical schools of Hindu philosophy. I expect most readers outside of India will be completely unfamiliar with the schools of Indian philosophy but some similarities may be seen with other philosophies; for example, the Nyāya theory

of universals seems to be similar to that of Platonic forms. At any rate, it is clear from this chapter that Indian philosophers have generally thought about psi phenomena to a much greater extent than those in the West. Anand launches into an argument in favor of neutral monism, which posits that there is but one type of substance in the universe and that the substance has both experiential and physical properties. But, as Vaidya admits, there is still a lot of work to do in bringing the study of psi into contemporary philosophy as not many contemporary philosophers have engaged with the research.

Chapter 4, “ESP, Causation, and the Possibility of Precognition”, by Richard Corry, asks whether ESP, especially precognition, is possible from a logical standpoint. First, Corry defines four types of psi but argues that the primary challenge is Type I ESP, i.e. a person being influenced by states in the outside world. One could argue that precognition would be problematic from a logical standpoint because of the possibility of temporal paradoxes but Corry argues that this is not the case. Physicists would be familiar with this line of thinking; see especially Chapters 4 and 5 of the second volume of *Extrasensory Perception*. However, in the conclusion there is a problematic passage where Corry states that psi has not reached a scientific standard to be believed while neglecting to specify what that standard might be. Wagenmakers et al., in Chapter 6, to their credit, do outline such a standard.

Chapter 5, “The Psychology of Belief and Disbelief in the Paranormal”, by Christopher C. French describes how people come to believe what they do about the paranormal, which is the purview of the field of “anomalistic psychology”. As scientists we may be saddened by the fact that most people do not come to their beliefs through a careful weighing of the experimental evidence. Such cognitive lapses are detailed by French who reviews the various perceptual biases that cause people to identify events as paranormal when they have mundane explanations. He also calls for more research into stubborn disbelievers as well, a topic that has not received much attention from the scientific community. It is my naive opinion, however, that determining the existence of psi should take priority over anomalistic psychology because paranormal phenomena being real would be an excellent explanation for why some people might believe in them; French does not appear to share such a view. Nonetheless, anomalistic psychology is an important contribution to understanding public belief in psi.

Chapter 6, “A Skeptical Eye on Psi”, by Eric-Jan Wagenmakers, Ruud Wetzels, Denny Borsboom, Regier Andrew Kievit, and Han L. J. van der Maas, is divided into two sections, one section assuming psi does not exist and asking what can be learned about science, the second section detailing what might convince a skeptic. I argue that the logical premise of the first section is problematic but the second section can be very useful for aspiring psi researchers.

Wagenmakers et al. write that, “In short psi research is an excellent control condition for science”. So are we to ultimately reject any scientific method that obtains evidence of psi? The only way to scientifically verify whether or not psi exists is through the scientific method, which the first question insinuates is impossible! Using psi as a control condition for science is a logical contradiction. This argument holds no matter which phenomenon, real or not, is used instead of psi. But stepping back, there is a concept that is still valid: the connection of psi research to the rest of science. The experimental and analytical techniques used in psi research are also used in mainstream fields; in fact, most scientists doing psi research also work or have worked in mainstream research. So in agreement with Wagenmakers et al., problems in psi research also reflect on other fields, especially, but not only, mainstream psychology. Wagenmakers et al. list ten threats to research find-

ings that could create bias in published databases, some of which have recently gained widespread recognition in psychology (Simmons, Nelson, & Simonsohn, 2011). I generally agree with all of them and think that psi researchers (but not only them!) should keep them in mind. Moving into the section on how skeptics can be convinced, Wagenmakers et al. list helpful procedural reforms to improve reliability of results, such as pre-registration of studies and division of exploratory and confirmatory studies. Wagenmakers et al. focus on Daryl Bem's famous "Feeling the Future" paper (Bem, 2011) but it is clear that the field of parapsychology has already been adopting the reforms mentioned, for example, a recent meta-analysis (Mossbridge, Tressoldi, & Utts, 2012) used only pre-planned studies. Finally, Wagenmakers et al.'s criticism based on lack of practical application is contradicted by McMoneagle's claims in Chapter 11 of this volume. Presumably Wagenmakers et al. believe that these claims are mistaken but this merely underscores the importance of continued scientific experimentation.

Chapter 7: "What Constitutes Replications in Parapsychology?", by Jessica Utts might have perhaps been titled "What Constitutes Replications?" since it is applicable to general statistical analysis. Utts explains that what an experimenter is actually replicating in an experiment is the effect size, not the *p*-value. This chapter is recommended for those wishing to understand the meta-analyses of parapsychology but who are not that familiar with statistical science.

Chapter 8, "Anomalous Cognition and Psychokinesis Research in European Labs", by Patrizio Tressoldi and Michael Duggan, describes psi research in the European continent from Iceland to Russia. The Russia section draws heavily on the work of May and Vilenskaya (May & Vilenskaya, 1992) into Soviet parapsychology efforts where it appears that funding fell with the collapse of the Soviet Union. Moving west, the chapter describes the many historical psi research societies in other European nations. Europe has a relatively large number of psi researchers in academic settings, described in this chapter. A key focus is on parapsychological research in the U.K., which is much stronger than the size of the nation might suggest. It was especially interesting to read how the Koestler Parapsychology Unit seeded researchers throughout universities in England and Scotland, making the U.K. a world center of psi research.

Chapter 9, "Anomalous Cognition/ESP and Psychokinesis Research in the United States", by Loyd Auerbach, Dominic Parker, and Sheila Smith reviews the psi research efforts ongoing in the United States at both universities and private institutes. But, as Auerbach et al. point out, the research being done is far less than the population, wealth, and public interest in psi of the United States would suggest. Though Auerbach and collaborators do not do this, it would be interesting to speculate why this is the case. The United States stands out among industrialized countries in religiosity (Wike, 2016) and at least one top parapsychologist has speculated on the connection of scientific hostility to parapsychology to (lost) religious beliefs (Radin, 2009). At any rate, after years of decline in psi research activity it remains to be seen whether there can be a sustained recovery.

Chapter 10, by Lance Storm and Adam J. Rock, is "Anomalous Cognition and Psychokinesis Research in Australian and Asian Labs". Australian research is described as being somewhat hampered by geographic isolation. Nonetheless, three major researchers are described, Harvey Irwin (who has mainly worked on anomalous psychology), the late Michael Thalbourne, and Lance Storm, both of whose work covers multiple areas.

Psi research in Japan and China is also described. Japan and China have vastly different religious traditions from the West but the academic establishment, especially at elite institutions, has

largely followed Western models. Nonetheless, this chapter describes how Chinese and Japanese researchers have, in particular, conducted studies on the traditional Asian concept of life energy, “Chi” or “Qi” in Chinese and “Ki” in Japanese.

Chapter 11, “Evidence for Precognition from Applied Remote Viewing”, by Joseph W. McMoneagle, has two parts. The first part details some of his current work using remote viewing for practical applications such as looking for mineral deposits, missing persons, and economic planning. The rest of the volume does not discuss applied psi so this section is an important justification for the question, “why study it?” The second part is a transcript of McMoneagle’s remote viewing of a Soviet Typhoon-class nuclear submarine under construction during the Cold War. This section is good for feeling the cadence of a remote viewing session, but it would have been better if pictures of the facility had been included so a reader could get an idea of the accuracy of remote viewing. One would need some familiarity with the Typhoon-class to get the understanding that this remote viewing (like other remote viewings) both brought forth accurate information (the object under construction is accurately described as a new submarine) and inaccurate information (the submarine is described as not having nuclear missile launch capability when, in fact, the Typhoon-class does).

Chapter 12, “Psychophysiology and Anomalous Cognition”, by Dean Radin, details a rapidly expanding area of psi research, using physiological measurements to understand psi. The chapter starts with a short section on Distant Mental Interactions with Living Systems (DMILS), in which an influencer tries to affect an organism through attentional influence alone. As Radin writes, research in this area is promising but sparse.

The next, much longer section, describes research in presentiment, which is unconscious precognition measured via physiological means such as skin conductance, heart rate, EEG, etc. This research has only become (relatively) widespread in the past two decades. Radin uses his encyclopedic knowledge of the field to cover all the lines of research. The credibility of this field has been boosted recently by publications of a meta-analysis using only pre-planned studies (Mossbridge, Tressoldi, & Utts, 2012). Interest is likely to continue increasing among researchers, including the organization of new research labs at the University of Groningen (Heymans Anomalous Cognition Group) and the University of California at Santa Barbara (Theoretical and Applied Neurocausality Laboratory).

Chapter 13, “Neuroscientific Investigation of Anomalous Cognition”, by Michael A. Persinger, approaches the physiological study of anomalous cognition from a different angle compared to chapter 12. Whereas the experiments described by Radin in the previous chapter generally involve testing large numbers of participants, Persinger focuses on a small number of individuals of apparent psychic ability. Although this makes replication of specific results difficult if not impossible, Persinger hopes his research will narrow down specific brain regions or brain wave frequencies responsible for psi. A key theme of Persinger’s work is an ambitious focus on finding the physical mechanisms in the brain responsible for all psi phenomena, including macroscopic PK, which is avoided by most researchers.

Chapter 14, “Variation of ESP by Season, Local Sidereal Time, and Geomagnetic Activity”, by Adrian Ryan and S. James P. Spottiswoode, examines claims that strength of psi is dependent on external conditions. The conclusions reached are mixed, with some effects showing enhancement based on season, local sidereal time, and geomagnetic activity but no significant pattern when analyzing ESP as a whole. This chapter ties in well with Chapter 13 in a search for an explanatory bridge between psychology and physics for ESP, but more theoretical work is obviously needed,

leading into Volume 2 of the series.

Taken together, the chapters of Volume 1 of Extrasensory Perception make the case that even if one does not believe psi has been proven, surely further research is justified. At the very least, this volume will provide a good snapshot of the field as it exists contemporaneously.

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EXTRA SENSORY PERCEPTION: SUPPORT, SKEPTICISM, AND SCIENCE, edited by Edwin C. May and Sonali Bhatt Marwaha. Santa Barbara, CA: Praeger, 2015. Pp. xvii + 411 (hardcover). \$131.00. ISBN 978-1-4408-3287-1

Extrasensory Perception Volume 2: Theories of Psi is an excellent compendium of, if not strictly speaking, "theories of psi", outlines of what final potential theories could look like. Based

on Chapter 7 of the volume (“The Multiphasic Model of Precognition” by Sonali Marwaha and Edwin May), we can divide theories of psi into domains. There is: (a) the physics domain, which describes how information or influence traverses space and time, and (b) the neuroscience (or psychology) domain, which describes how the brain and mind use the information obtained from the physics domain. I found the domain concept useful in classifying the other chapters based on their foci on either psychology or physics.

Neuroscience Domain Theories

In “Theories of Psi,” Chapters 9, “Activational Model of ESP”, by Zoltán Vassy, and 12, “First Sight: A way of Thinking About the Mind, and a Theory of Psi”, by James Carpenter, are examples of psychology-domain theories of psi. Both attempt to link psi to phenomena in mainstream neuroscience and psychology, an accumulator-based model of decision making in Vassy’s case (Usher & McClelland, 2001), and of unconscious psychological processes in Carpenter’s case (Carpenter, 2004, 2005). Carpenter’s First Sight theory is especially striking in its explicit rejection of the popular perception that psychic phenomena are exclusive to a special class of “psychics” but are instead present in everybody’s unconscious mind. This is a concept I wish had a much greater profile within both the scientific community and general public, as it would dispel many misconceptions about the field of parapsychology. Those interested in further reading should peruse James Carpenter’s book, *First Sight: ESP and Parapsychology in Everyday Life* (Carpenter, 2012). Vassy explores an anomaly pertaining to negative-aim target guessing experiments. If one naively assumes that during a card-guessing experiment a person either successfully identifies the target or fails to identify the target for each trial (and thus gets a chance result), one can derive a ratio between positive-aim and negative-aim experimental hit rates. Vassy shows that this is not what happens and that an accumulator model is needed to explain the results. Both chapters are convincing pushes to incorporate parapsychology into the rest of psychology.

Physics Domain Theories

The Metaphysics of Physics Domain Theories

The other 10 chapters of the volume primarily discuss psi in the “physics domain”, to use the terminology of May and Marwaha. Here, the situation becomes more controversial because one must decide which lines of evidence need to be legitimately included in a theory of psi. If there is any broad consensus within the field of parapsychology, it is that the evidence for precognition is convincing. Beyond that, the waters get murky. A theory of psi that relies on transfer of information from a physical brain at one point of time to the same brain at a different point of time (as some of the theories outlined in the volume posit) would struggle to explain phenomena such as macro-psychokinesis or children who remember previous lives (such as in Stevenson, 2000), to name a couple of examples. So the chapters of this volume do not answer all the same question, especially when they focus on different lines of evidence. Still, I found all chapters strongly argued.

Maybe the first decision one has to make in formulating a physics-domain theory of psi is whether one needs to be constrained by the physics of our universe at all. David Rousseau’s Chapter 13, “Anomalous Cognition and the Case for Mind-Body Dualism,” takes a step back and looks at all of the various metaphysical models of reality. Chapter 13 provides a good overview of the often esoteric categories used to approach questions such as “Do souls exist?” and “What is the relationship between mind and matter?” Rousseau’s argument in favor of dualism ultimately hing-

es on the rejection of the superpsi hypothesis, an alternative interpretation of the data that explain veridical information received in mediumship and near-death experiences as being not necessarily caused by a connection with an alternate spiritual realm but by precognition and clairvoyance alone (as described in Sudduth, 2009). Readers may have various views on survival of consciousness, but Rousseau's clarification of metaphysical models is certainly helpful.

Time Symmetry

Moving on to physics-based theories of psi, perhaps the most obvious starting place (to a physicist) would be the time symmetry of fundamental physics equations. That is, it does not matter whether time is run forward or backwards, the physics of a system remains equally valid. It is only in the increase of entropy from the Second Law of Thermodynamics where an arrow of time becomes apparent. Chapters 3, 4 and 8 are the most direct examinations of time symmetry in the book. Chapter 3, "Physics Beyond Causality: Making Sense of Quantum Mechanics and Certain Experimental Anomalies", by the late Richard Shoup focuses on explaining the experimental and theoretical background of setting up correlations in quantum mechanics which seem to violate common-sense notions of causality, using the famous EPR experiment (Einstein, Podolsky, & Rosen, 1935) and Wheeler's delayed choice experiment (Jacques, Wu, Grosshans, Treussart, Grangier, Aspect, & Roch, 2007; Wheeler, 1984) as examples. Shoup suggests that these correlations can be extended to explain psi effects. Daniel Sheehan, in his Chapter 4, "Remembrance of Things Future: A Case for Retrocausation and Precognition" restates much the same themes as Chapter 3 but from a different perspective that includes the transactional interpretation of quantum mechanics (Cramer, 1986), which posits that our macroscopic world of the present is being continuously formed via interactions between past and future. Dick Bierman in Chapter 8, "Consciousness Induced Restoration of Time Symmetry", while remaining more agnostic on whether psi effects are quantum mechanical or not, admirably makes specific predictions for future experimental discoveries using his theories, namely the presence of time-symmetric effects in the highly coherent fluid of a Bose-Einstein condensate, the prediction that the structure of physiological effects after a person is affected by a stimulus will be reflected in the structure of data recorded before the stimulus occurs, and finally that highly correlated brain states should exhibit greater precognitive effects.

Entropic Theories

The relation of the arrow of time with changes in entropy suggests possible entropic theories of psi. This is the theme of Chapter 6, "Entropy and Precognition: The Physics Domain of the Multiphasic Model of Precognition", by Edwin May and Joseph Depp. The suggestion that entropy gradients called "Shannon entropy" (Shannon, 1948) could be correlated with the strength of psi is a fascinating testable hypothesis. Otherwise the chapter is usually highly speculative in a broad-brush fashion on what could be the mechanism of information transfer.

Extra Dimensions

One way to enact the information transfer across the distant points in space-time apparent in psi is to use multiple dimensions, allowing psi to "shortcut" across the other dimensions. Theoretical and experimental work has investigated extra dimensions utilizing high-energy physics experiments but no discovery of extra dimensions has been made (Patrignani, 2016). Nonetheless, Bernard Carr's Chapter 2, "Higher Dimensions of Space and Time and Their Implications for Psi" is well written and offers explanations for a broad range of phenomena. I would be interested to read about experimental predictions being made for interactions involving how the "subtle matter"

that Carr posits connects with the higher dimensions.

Quantum Theory

Two chapters of the volume describe theories very explicitly based on quantum theory. In Chapter 5, “What you Always Wanted to Know about the Observational Theories”, Brian Miller uses quantum theory to formulate a view of psi based on feedback. According to Millar, it is the observation of the system during feedback, particularly by the experimenter, which determines whether an experiment displays correlations interpretable as psi. Observational theories such as Millar’s posit the experimenter rather than the experimental individual as the source of psi. Perhaps individual experiments in the future will need to take the measure of participant motivation versus experimenter motivation. One might apply such an analysis to Bem’s retrocausal recall experiments in evaluating the replicability of the erotic experiment against the others (Bem, 2011; Bem, Tressoldi, Rabeyron & Duggan, 2016).

Another observational model is “The Model of Pragmatic Information” (MPI) described in Chapter 11 by Walter von Lucadou. In this model, psi is the manifestation of meaningful correlations. A correlation is meaningful if information is conveyed to the observer. This correlation can be in the form of a synchronicity (in Carl G. Jung’s sense). Differentiating itself from other models, MPI does not posit any transfer of information. This provides a clear solution to the issue of time paradoxes that bedevil any theory that posits retrocausal information transfer. But a question remains in my mind: What do we make of anecdotal reports of psi being used to avoid danger? Are these events not what they seem?

Decision Augmentation Theory

To round out models of psi, we come to one that experimentalists such as me have nightmares over: decision augmentation theory (DAT). As explained in Chapter 10, “Experimenter Psi: A View of Decision of Augmentation Theory”, by Edwin May, DAT posits that experimenters use their unconscious psi to help optimize their experiments to achieve their desired results. Although the chapter uses the example of the Global Consciousness Project, the nightmare is that DAT could affect any statistical measurement across multiple fields from psychology, to medicine, to certain subfields of physics. What does this mean for the objectivity of science? The scientific community should be much more aware of this threat.

Future of Psi Research

The volume closes out with “Part II: The Future of Psi Research.” Chapter 14 is a reproduction of the Parapsychological Association Presidential Address from 1975 given by Charles Honorton titled, “Has Science Developed the Competence to Confront the Paranormal?” I was very depressed reading it, thinking that almost no progress has been made towards acceptance of psi research by the broader scientific community in 40 years and how new strategies might be needed. But this may be merely my own geographical bias. Volume 1 of Extrasensory Perception gives highly contrasting views regarding the status of psi research in the United States versus Europe with much more optimism shown towards non-U.S. research. It may be safe to say that much progress has been made in the normalization of psi research in many (but not all) nations.

The final Chapter 15, “Next Step: Process Oriented Research”, by Edwin May and Sonali Marwaha, reviews the U.S.-government-funded Star Gate Program and proposes a program of process-based research. The chapter does not explicitly state what I think was one of the greatest

“problems” with the Star Gate program from a scientific standpoint: It was classified and so there could be no interaction with the broader scientific community, meaning that other scientists never got the chance to be inspired by and interact with the results. I think May’s suggestion of bringing in researchers from multiple mainstream fields would be a major breakthrough. The problem with realizing this comes from the cultural and social taboos against psi research.

All chapters of Extrasensory Perception Volume 2 are worth reading and are recommended for any scientist interested in psi research. Though each reader will have his or her own favored theory out of the collection, a compendium like this will allow the research community to start testing theories in the best traditions of the scientific method. I thank Edwin May and Sonali Marwaha for preparing this excellent collection.

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KNOWING THE UNKNOWABLE: PUTTING PSI TO WORK, by Damien Broderick. Vancleave, MS: Surinam Turtle Press, 2015. Pp. 264. \$18.00 (paperback), \$35.00 (hardcover). ISBN 978-1-60543-861-0

Not everyday does one run across a parapsychology treatise that actually reads like a crime novel, even as it deals with lots of numbers and what would normally be a batch of tedious statistics. Indeed, I'm not sure one *ever* comes across such a work. Until now, that is.

In less capable hands Damien Broderick's recent book, *Knowing the Unknowable* might have been as compelling as a pile of last autumn's leaves. But his mastery as a writer and a storyteller is such that he engages our curiosity and sense of adventure, keeping us turning pages just to see what happens next. At the same time we are informed, educated, and even (subtly) lobbied for an argument that not only makes a lot of sense, but is also almost certainly true. At least, I was convinced.

Broderick's premise is, first, that one of the most consistent sources of ESP effects can likely be found in experiments yielding large numbers of responses –either many participants contributing a few responses each, or a few contributing many responses each. However, as he also makes abundantly clear from the outset, the devil in the details shows up when one tries to tease out the signal from all the psychological “noise” that results any time human mental processes get involved. In the end he is persuasive in arguing that with enough noise- and error-correction of the right kind, psi can usually be found.

The whole book is a survey of sorts. Along with the sleuthing elements, it is also a quite useful annotated chronology of the history of these kinds of mass-data experiments. Beginning with the Woolley/Lodge card-guessing experiment broadcast on BBC in the 1920s, there are mentions (where there are not enough available data) and descriptions (where there are) of most, if not all of the public and private mass-response experiments up until the recent past. Where the available data are sufficient, such as in the Zenith Radio experiment in 1937-38, the 1950s-era West, Fisk, and Michie series, and Ryzl & Stepanek's work of the late 1950s and early 1960s (among several others), Broderick proceeds with an in-depth analysis of what went right, what went wrong, and what we can learn that will improve success in future similar mass-response exercises. He spares not even himself from investigative scrutiny. Thanks to the special access to the data he has, his own 1973 mass-response experiment done through the auspices of a newspaper in his native Australia is submitted to perhaps even more intense investigation than many of the others.

One of the more surprising outcomes of his examination of each of these experimental sets is the discovery that some of them which at first seemed to show some (or even strong) evidence of psi effects, upon further analysis actually did not; others that seemed to show no psi effects

actually did; and in at least one case an experiment that at first looked like a strong psi statistical “hit” but was shown not to be, was then proved to actually have a significant psi effect, albeit for different reasons than what had been originally expected.

But this is not just a history of this family of experiments. The book also catalogs and, just as importantly, serves as somewhat of a tutorial in dealing with the kinds of noise that prove so troublesome in finding the signal amidst large numbers of responses. As Broderick notes, “Often, in these experiments in repeated guessing with majority vote evaluation, we get a batch of raw data that is distorted by certain recurrent biases. This is basically ‘noise’ in our data that can overwhelm valuable results”. He finishes this thought with the question, “Can we do anything about that?” (123) Answering that question is what a large part of this book is about.

Discussed here are effects well known to most experienced parapsychologists. The (in) famous decline effect is one of them, as well as psi-missing. Among the others are preference biases; position or sequence biases; perceiver bias, and so on. For each case, Broderick answers his earlier question about what one can do about the problem –how such noise can be identified and dealt with to winnow out the signal from what is usually a vast overburden of mental or statistical static.

Thus, *Knowing the Unknowable* also chronicles the improvements in experimental technique, showing how mistakes of the past have led to improvements over time into the present. Though doing this requires some pretty technical discussions at times, his dryly humorous style and no-nonsense, one-step-at-a-time explanations go a long way toward making the subject not only comprehensible but remarkably palatable.

I was particularly taken with how well he can take a difficult concept and render it comprehensible to the average reader. For example, in a discussion of how to deal with preference bias (where participants select certain target choices far out of proportion to others, regardless of whether those targets were the correct ones), he notes that at least part of the cure requires statistically “normalizing” the responses to help account for the preference-bias effect. But he then goes on to explain why that step, though necessary, is insufficient.

It’s as if we took a crowd of 81 people with the usual assortment of heights, gave one person in nine a small box to stand on, shuffled them all up, and made everyone stand behind a fence in order of visible height. Could you tell which nine people looked taller than they really were? For that matter, could you be sure any of them were standing on boxes? (102)

Not to say that getting through the book is not rough going at times. As Broderick himself notes “You *will* find some numbers in this book. Tables of them in many chapters. Decimals that are added and changed into percentages and subtracted and turned on their heads. Don’t be alarmed. As I just promised, there will be no calculus or anything resembling advanced mathematics, or even strict statistics.”

Even without the calculus, though, it can be a challenge. You *can* read this book without engaging with all those tables and decimals and percentages. Broderick is conscientious about giving you in the text the gist of the points he is trying to make. But to fully understand what is happening, it helps to dig in to the actual tables, numbers, and relations. He tries to point the way for you, often briefly outlining and highlighting what he wants you to notice in the charts and

tables. But it is not always so easy. There are the occasional “exercise left to the reader” remarks that may leave the arithmetically-challenged among us not quite sure what the figures are trying to show.

Fortunately, Broderick alleviates all with strategically-placed bits of humor. “I could go on for a while with charts and additional tables of numbers”, he observes in one such passage. “But this really is not a book of formal science but rather an entertaining glance (I hope) at some of the hairier patches of fringe science, and frankly I’d rather go off for a brisk walk, don’t you agree?” (p. 196).

The book is not one-faceted. It is not aimed just at proposing and then demonstrating a way of looking at oft-ignored experiments and the data they produce. Rather, it is also, in a way, a defense of psi. Though Broderick says at a number of points that he is not out to produce yet another attempt to “prove” the reality of psi and ESP, he does pause appropriately to add points of defense for his thesis and to give critics and skeptics a few good thumps.

In one example, early in the book he deals with an objection that is likely to be brought up, given the scope that these mass experiments demand. Considering the often mind-numbingly large numbers of participants and/or guesses required to produce a distinct result, it could be argued that the logistics and scale of such experiments make them impractical in terms of time and resources. Broderick puts it back in perspective by comparing and contrasting with the imposing quantity of people and parts necessary for such massive mainstream science projects as the Apollo Program or the Large Hadron Collider to find their successes. From that perspective the demands of mass psi experiments seem modest indeed.

He also has some pithy words for the skeptics. In showing how an error-correction protocol produced impressive scores in a mass experiment originally thought to at best show weak psi results, Broderick notes “...it seems to me that the qualitative insights suggested by this reanalysis are provocative. Investigating claims of dramatic ‘miracles,’ whether as evidence for psi or as a paradigm for shooting down psychic pretensions (as James Randi and other skeptics do), is almost wholly pointless” (p. 102).

If there is a weak point to the book, it is the conclusion. I read along, expecting to arrive at the end to find a satisfying reveal that summed up the case, tying up all the loose ends in neat little bows. That does not happen here, at least not precisely. It turns out that all the takeaway points have been scattered throughout the text. As Broderick comes down off a discussion of associative remote viewing and how it might fit into the rest of the context of the book, there is a page or so of summation, though it is not a summation of the book itself. Rather, it is a philosophical speculation about how psi in general might be a positive element in the future of the human race. A hopeful and forward-looking thought to be sure, and one with which I agree wholeheartedly, but hardly the denouement one might be looking for after following the clues and investigative leads that thread throughout this deep and detailed story.

Perhaps I am just quibbling over book formatting, as it seems the true conclusion might be the appendix that immediately follows. Emblazoned in all-upper case letters as “BASIC DO-IT-YOURSELF PSI FORECASTING”, this section is a compendium of the lessons-learned throughout the book and serves as an informal recipe for what to do and what not to do if you want to succeed in your own mass-response ESP experiment. Many who engage with a book often ignore what they perceive as peripherals before the first chapter and after the last, so they may

ignore this crucial appendage. To get a full sense of this book the appendix is essential reading. With some filling out this section would have made a great concluding chapter.

But given the value inherent in this book, that is a small concern. This is an essential book to the libraries of any discerning person committed to the science of parapsychology. But it is more than that. It is also a formula for how to get a reliable effect out of a relatively neglected psi experimental paradigm that, if one goes to school on the lessons offered among the pages of *Knowing the Unknowable*, could have seriously valuable practical implications for solving problems in the real world.

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To the Editor:

I was saddened to learn of John Palmer's retirement from his position as Editor of the *Journal of Parapsychology* (*JP*). John has served in this capacity for many years, and he has conducted his duties in this role with grace, fair-mindedness, and toughness. The field will sorely miss him in the Editor role. He is truly one of the giants of parapsychology. I am glad that he will continue to serve in the capacity of Associate Editor. John has been my main contact in the field of parapsychology for many years, and I have worked closely with him as a referee over the years. I respect and admire John and look forward to working with him in his new role.

That said, in his article "Survival and the Mind-Body Problem" in the Fall 2016 issue of *JP*, in the section entitled (ironically) "Offensive Ad Hominem Language", John asserts that I have been "whiny" about the fact that the authors of *Beyond Physicalism* did not cite any of my three books on the subject. Actually, I am not whining about the lack of citation, but rather about their failure to address any of the counterarguments to personal survival presented in my books as well as in the writings of a vast host of authors, among them the contributors to the compendium *The Myth of the Afterlife* (MOA), edited by Michael Martin and Keith Augustine, which was reviewed in the same issue of *JP*. In his review of MOA, James Matlock (2016) states that:

The fact is, neuroscientists have never been able to discover where in the brain memory is stored, despite decades of effort directed at the problem. [Karl] Lashley (1950) spent 30 years trying to locate memory "engrams," but he finally gave up, concluding that memory was not recorded in the brain after all. There is no doubt that the brain becomes engaged when things are remembered, and different types of memory activate different parts of the brain (Gauld, 2007), but all that is evidence for is a correlation between memory retrieval and neural activity, not the reconstruction of memory from traces stored in the brain. The lack of evidence for the trace theory of memory led Pribram (1991) to advance the theory that memory is represented holonomically and distributed throughout the brain, but that proposition has failed to gain widespread acceptance. Given the uncertainty among neuroscientists about whether memory is engraved in the brain, psychical researchers seem to me justified in considering other possibilities, especially inasmuch as their data tell them that memory cannot really be there. A currently fashionable idea is that memory is preserved in a subquantum "Akashic field" (Laszlo, 2007, 2009), from which it is retrieved by psi (p. 242).

In citing Karl Lashley's celebrated failure to find localized memory traces in the brain, Matlock is going back to work conducted in the 1930s, when the field of psychology was in its infancy. Pribram's work is a quarter of a century out of date. Matlock states that a currently fashionable idea is that memories are preserved in a subquantum Akashic field. This idea is anything but fashionable among contemporary neuroscientists, and will do nothing to enhance the credibility of parapsychology. There has been a vast evolution in neuroscientific evidence and theories over the past half-century, which is somehow totally overlooked by today's "paraneurologists".

Think of “Jennifer Aniston” cells and “place cells” that fire in sequence as a maze-running rat’s memory is consolidated during dreams. Think about the fact certain hippocampal structures must remain intact if new declarative memories are formed and stored. The list goes on almost literally *ad infinitum*, and much of this research is discussed in MOA.

Matlock’s conception of the soul is close to my own. He sees the “self” (his term for soul) as being analogous to a riverbed through which a stream of conscious experience flows. I see the soul as a center of pure consciousness which undergoes a succession of conscious experiences. Thus far, the primary difference between our views is largely metaphorical. Matlock sees streams of consciousness as coming to and flowing through a fixed “riverbed” whereas I envision souls as centers of pure consciousness that may travel from one physical system to another even before death. I posit that multiple souls may inhabit a single body. Both of us reject the assertion that centers of consciousness do not exist, as espoused by some Buddhist sects and philosophers such as Daniel Dennett, who disparages such centers as “Cartesian theaters”. We both reject the view that consciousness itself does not exist, as espoused by eliminative materialists, who themselves verge on a well-earned extinction this point.

Matlock and I also share the view that one cannot have streams of conscious experience without conscious experiencers of some kind, as proposed in Whitehead’s “occasionalism,” and that such centers of consciousness persist over macroscopic time intervals. I am directly aware of myself as such a center of consciousness and as the experiencer of a stream of consciousness. This knowledge is to me directly given. Centers of consciousness seem to get stuck in material systems such as brains from time to time, much to our chagrin, which suggests that such centers have physical aspects, such as locations in spacetime. Of course, the physical world might itself be a mathematically-generated collective dream.

Where we part company is that Matlock proposes that aspects of the stream of consciousness, such as memories, may be dragged along with the self or soul after death, and thus such personality traits may survive death. I agree that this is a logical possibility and thus such survival of personality elements should not be dismissed on an *a priori* basis. However, the existing empirical evidence is insufficient to conclude that such survival has been demonstrated, and a large corpus of neuroscientific evidence suggests that such survival is unlikely, in view of the intricate dependence of conscious experience and personality traits on brain activity.

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We extend our gratitude to the following reviewers for Volume 81 of the *Journal of Parapsychology*:

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Date

9/19/17

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).