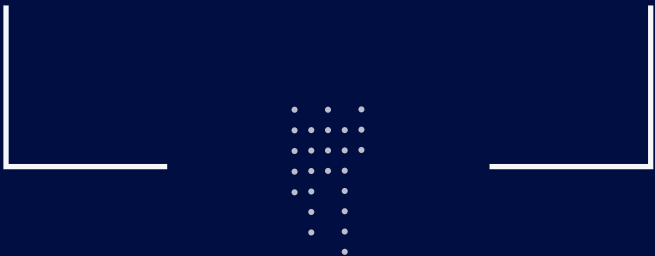


SSE-PA CONNECTIONS 2021

ABSTRACTS OF PRESENTED PAPERS

John G. Kruth, Program Chair



A Combined Online Convention of the



Parapsychological
Association

&



**SOCIETY FOR
SCIENTIFIC EXPLORATION**

A Note from the Program Chair

John G. Kruth, Rhine Research Center

It was my great pleasure to chair the first major online conference presented jointly by the *Society for Scientific Exploration* and the *Parapsychological Association*. The conference was held July 23–31, 2021, in an online forum hosted by *HealthySeminars.com*, and featured speakers from around the world.

In both 2020 and 2021, there were plans to meet for a physical conference hosted by the *Rhine Research Center*. Though we were not able to meet in person due to world health restrictions, our goal with this event was to take advantage of the flexibility provided by an online forum unconstrained by travel limitations. At the same time, we wanted this event to be more than a bunch of online presentations that you could watch as if they were videos on your computer.

The program committee and arrangements chair combined to create a unique and creative event that was designed to accommodate different time zones and provided significant opportunities for participants to continue discussions between sessions and after hours. In an attempt to mimic the best aspects of a live conference experience, speakers were encouraged to interact with attendees in virtual meeting rooms before, during, and after the presentations. There was even a virtual bar for the late-night conversations that often are so productive when we meet for live conferences.

The long abstracts that follow were each accepted for presentation at the online conference. Speakers pre-recorded their presentations, and their videos were played according to the conference schedule. Speakers were available after the scheduled video presentation to answer questions and add insight. The videos were also available to conference attendees to view at a later time.

This document lists the long abstracts in alphabetical order based on the family name of the first author, with the exception of the Presidential Addresses for the *Parapsychological Association* and the *Society for Scientific Exploration*, which are the first two abstracts listed.

This is a summary of the presentations at this conference. If you were able to attend or present at this conference, I hope this summary will remind you of the wonderful information that was provided in this combined event by two major organizations studying parapsychology and edge science. The conference was long (9 days total) and packed with a variety of information. The talks had a wide appeal and some great detail from professionals, citizen scientists, and experiencers from around the world.

It was a privilege to help define and organize this event, and it would never have happened without the assistance of the program committee, arrangements chair, and conference committee. In addition, numerous volunteers pitched in to make this conference a great success. I hope you enjoy this summary and can use it as a reference in the future.

Convention Committee:

William Bengston, Lorne Brown (Arrangements Chair) Renaud Evrard, John Kruth (Program Chair), John Valentino, Annalisa Ventola

Program Committee:

Callum Cooper, John G. Kruth (Chair), Margaret Moga, Roger Nelson, Christine Simmonds-Moore, Paul H. Smith, Chantal Toporow

Parapsychological Association Presidential Address

“Everybody Knows Parapsychology is not a Real Science”: Public Understanding of Parapsychology

Renaud Evrard

Introduction: Parapsychologists purport to apply scientific method to the investigation of commonly reported exceptional experiences and phenomena. Despite over a hundred years of associated research effort, “the status of parapsychology as a scientific endeavor is disputed by a substantial section of the contemporary mainstream scientific community” (Irwin, 2007). This situation seems less regrettable when it is placed in a larger context. In fact, many people perceive the study of human behavior as unscientific (Lilienfeld, 2012). This author argued that psychological science is experiencing a public perception problem that has been caused by both public misconceptions about psychology and the psychological science community’s failure to distinguish itself from pop psychology and questionable therapeutic practices. Ferguson’s article (2015) used this quote in its title — “Everybody knows psychology is not a real science” — and currently several researchers are searching to document this public skepticism of psychology. For instance, Newman, Bakina, and Tang (2012) developed this framework to understand (a) the forms that skepticism about psychological science can take, (b) the roots of such skepticism, and (c) how one might address or even undermine it.

My purpose is to encourage the development of a similar perspective within the research topic of “public understanding of science,” but regarding the skepticism against parapsychology as a matter worthy of empirical study. The scientific legitimacy of parapsychology has been shown to be rejected most strongly by some members of the “scientific elite” (McClenon, 1982), and more strongly by psychologists than by other scientists (Wagner & Monnet, 1979). This does not have to be taken a priori as the result of a specific demarcation expertise, because a closer look reveals the presence of numerous biases. In Wagner and Monnet’s survey, this skepticism is most often based on prejudices about the impossibility of such phenomena. Butzer (2020) conducted a study of the bias in the evaluation of identical abstracts framed as either “parapsychological” or “neuroscientific.” The results revealed that participants rated the neuroscience abstract as having stronger findings and as being more valid and reliable than the parapsychology abstract, despite the fact that the two abstracts were identical. Preferred beliefs reinforced these biases. This confirmed the notion that belief-contradictory information is resisted, which is supported by a great deal of research in the area of biased assimilation (Munro, 2010). Preliminary research on these potential biases suggests that even scientists are subject to confirmation biases, and anomalistics makes these issues very obvious (Koehler, 1993; Roe, 1999; Hergovich et al., 2010). Sometimes, following the “scientific impotence

excuse” (Munro, 2010), people discount scientific evidence that disconfirms an important belief by endorsing the idea that scientific methods are unable to address the topic.

The same aspects of public understanding need to be explored with over-enthusiastic reception of parapsychological research, often merged with all kinds of paranormal and supernatural claims (Evrard & Ouellet, 2019). Indeed, public understanding of parapsychology invites us to a “reflexive anomalistics” (Schetsche et al., 2015), which can be characterized as follows: Being aware of (a) the epistemic features of the phenomena being researched, (b) the methodological problems of scientific investigation related to these features as well as (c) the areas of tension between subjective evidence, scientific proof and social discourse — features which characterize this research field — and taking these factors systematically into account. As responsible and reflexive scientists, we should attempt to understand why and how people appraise our research and how this affects the very way we work and communicate results.

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SSE-PA 2021: Abstracts of Presented Papers

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Society for Scientific Exploration Presidential Address

Let's Move On! Transitioning to Pragmatic Applications of Anomalies

William Bengston

Introduction: In this talk I take a wide perspective look at the potential benefits of developing practical applications of scientific anomalies. The traditional approach to scholarly activities has emphasized the gathering of rigorous data and the development of theoretical models to explain those data.

I take no issue with those traditional emphases, but suggest they be supplemented with parallel work investigating pragmatic applications. For too long researchers in anomalies have somewhat defensively, and perhaps naively, thought that with sufficient data critics might be persuaded to soften their criticism. This has, for the most part, not been a winning strategy.

I suggest that acceptance of the reality of any particular phenomenon deemed anomalous might be due not simply to sufficiently persuasive data, but also the possibility that acceptance might also be due to either personal experience or practical application. Given the current explosion of knowledge expansion, everyone, scientist and layperson, must increasingly rely on those socially deemed to be experts and therefore worthy of our attention. The problem of acceptance of most anomalies, then, can largely be reduced to questions of “belief” and “conversion” to particular points of view.

The younger generation seems less interested in empirical squabbles or theoretical arguments, and more interested in personal experience and practical applications. I suggest that societies such as the SSE and the PA might benefit from supplementing their traditional basic research with more pragmatic applications. A brief look into some recent healing research serves as an illustration.

Conference Abstracts

Molecular Bases of Psychic Talent: Functional and Structural Analysis of the TNRC18 Protein

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Centro de Investigación de la Sintergia y la Consciencia (CISC), Mexico City, Mexico

Introduction: The idea that psychic abilities (or psi) run in families has been a little-explored topic within the field of parapsychology. Several experimental studies (Nash & Buzby, 1965; Broughton & Alexander, 1997; Parker, 2000) evaluating psi performance of different family members, as well as surveys (Cohn, 1994; Wahbeh et al., 2018, 2020) and pedigree analyses (Cohn, 1999) suggest that this might be the case. However, the first molecular evidence supporting this idea appeared a few months ago. From a carefully selected sample of psychic individuals, DNA was obtained and compared with that of a control group (nonpsychics). Though no significant differences were found in coding regions, a consistent single-nucleotide polymorphism (SNP) was found in one intron of the TNRC 18 gene (Wahbeh et al., 2021). This gene encodes a massive protein (around 10 times the size of the average protein) whose function and structure has not been properly elucidated yet. TNRC18 protein expresses in many organs and in different brain regions (Table 1) and has nine isoforms.

The aim of this work is to delve into the functional and structural aspects of the TNRC18 gene product and try to determine if it is likely to be somehow involved in psychic function. In addition, I investigate if there is a phylogenetic pattern regarding TNRC18 and evolutionary-related proteins (homologs).

Methods: The sequence of human TNRC18 protein was used as a query in the phmmer program (Saripella et al., 2016), which searches for similar proteins in completely sequenced genomes from the Uniprot database, which is one of the main databases in which properly curated complete genomes are stored. The cutoff value was 10e-05. Secondary structure was then predicted with GOR4 (Kouza et al., 2017) and Phyre2 (Kelley et al., 2015) programs. These employ different algorithms that analyze amino acid composition of proteins to try to infer the possible folding of the protein sequence. Phyre2 was also used to model possible protein domains found in the homologous search with phmmer. To provide additional support, the IUPred2A program (Mészáros et al., 2018) was used to predict disordered regions and further confirm the secondary and tertiary structure analyses. Global and local alignments using the Needle and WATER programs, respectively, from the EMBOSS suite (Rice et al., 2000) were performed to corroborate the presence and position of identified domains.

Results: The TNRC18 protein is widely distributed along the vertebrate clade, but also in some arthropods and one flatworm. Additionally, homologs were found in other eukaryotes, mainly plants (Figure 1). Three functional domains for the TNRC18 protein were identified: bromo-adjacent homology (BAH), Tudor, and Hoxb9. Prediction of disordered regions confirmed the presence of those domains and revealed that most of the protein structure might lack a defined secondary structure (i.e., may be disordered) (Figure 2).

Discussion: All protein domains identified in TNRC18 are somehow involved in transcriptional regulation (Callebaut et al., 1999; Lu & Wang, 2013; Prévôt et al., 2000). This may suggest that the TNRC18 gene alone might not be the only one responsible for psi development, but that it may have a pivotal role as part of a transcriptional regulatory network. This kind of networks comprise different regulatory proteins and their interactions with target genes and have been found to be especially important in several brain-associated aspects, such as behavior (Sinha et al., 2020) and brain disorders (Pearl et al., 2019).

Although Wahbeh et al. (2021) found only one polymorphism in an intronic sequence of the TNRC18 gene, this could have important implications in the expression of the gene product. Variation within intronic regions can result in the expression of different protein isoforms (Tress et al., 2007; Mucaki et al., 2020), even if such variation is due to a unique SNP (Ueffing et al., 2009; Jakubauskiene et al., 2012). If the TNRC18 gene is indeed associated with psi, it is likely that this is also the case in different organisms possessing this gene. Its presence in all main vertebrate clades supports the idea that psi may not be an exclusively human trait, but that it might be present at least in other animals (Dutton & Williams, 2009). Further phylogenetic analyses that include distantly related homologs could help to elucidate the evolutionary path of the TNRC18 gene. Combining this with more robust genetic studies that follow the line of Wahbeh et al. (2021) could also give us a wider picture of the molecular basis of psychic functioning.

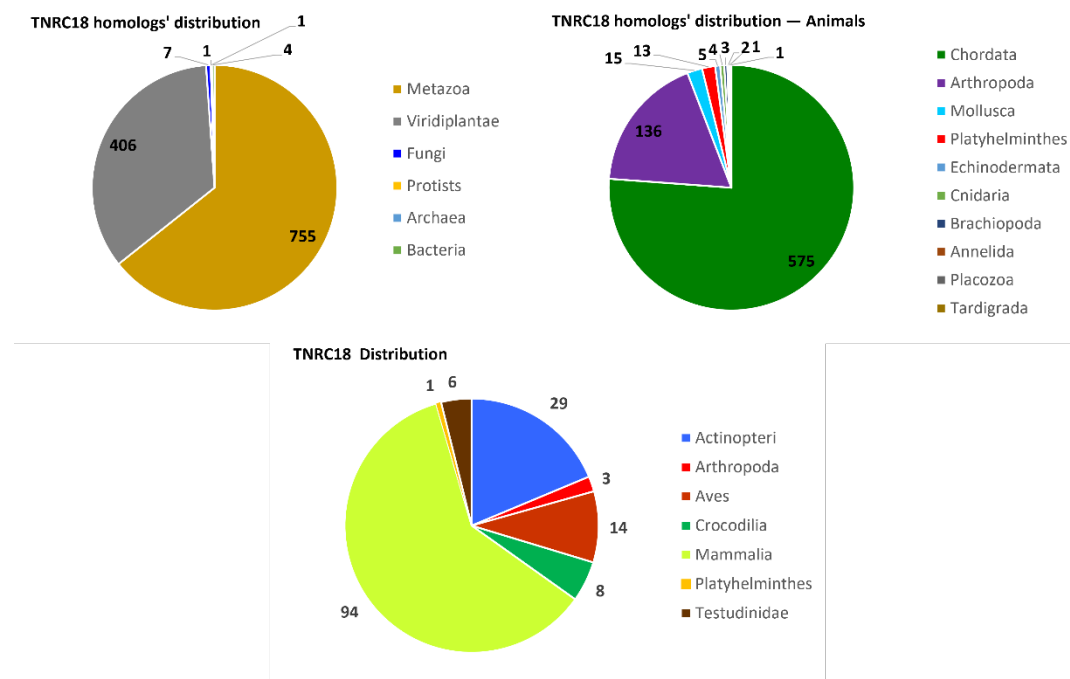


Fig. 1 Distribution of TNRC18's homologous proteins in different organisms. Homologous hits were obtained with the phmmer program (Saripella et al., 2016).

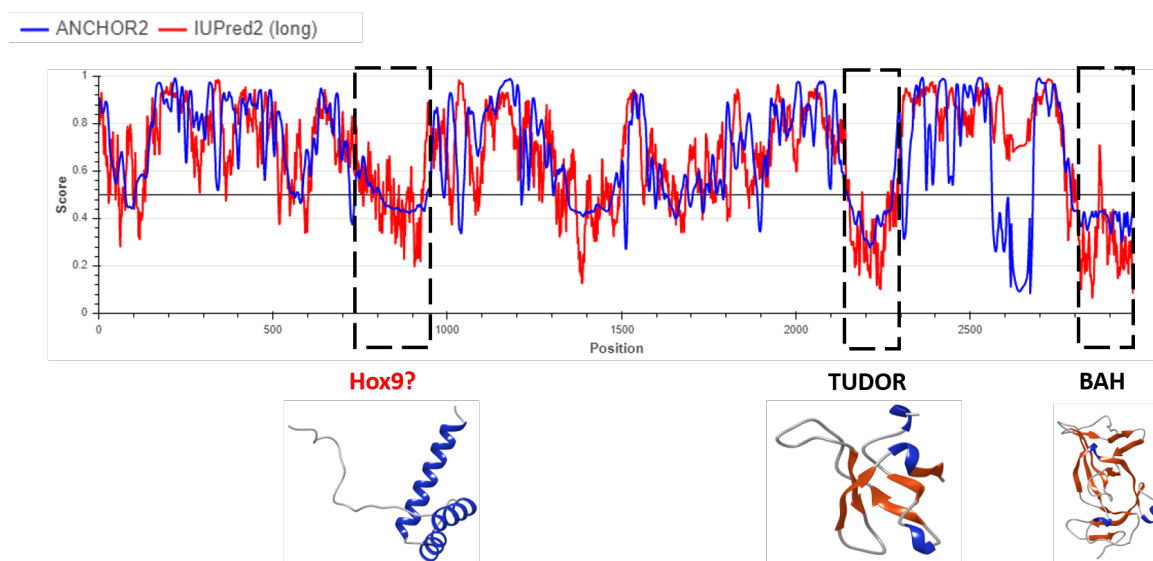


Fig. 2 Prediction of disordered regions and functional domains for the TNRC18 protein. Two different algorithms implemented in the IUPred2 software (Mészáros et al., 2018) were used to predict disordered regions (those with a score >0.5). Regions below

the 0.5 score are likely to be functional domains with a defined secondary structure. Pairwise alignments of the canonical sequence of these domains with TNRC18 give additional support for their presence in this protein.

Table 1. Expression levels of TNRC18 in different brain structures. Data were obtained from The Human Protein Atlas (<https://www.proteinatlas.org/ENSG00000182095-TNRC18/tissue>)

Brain structure	Cell type	Expression level
Cerebral cortex	Endothelial cells	Medium
	Glial cells	Medium
	Neuronal cells	High
	Neuropil	Medium
Hippocampus	Glial cells	Medium
	Neuronal cells	High
Caudate nucleus	Glial cells	Medium
	Neuronal cells	Medium
Cerebellum	Cells in granular layer	Medium
	Cells in molecular layer	High
	Purkinje cells	High

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The Roads to Supernormality: A Biological Perspective

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Introduction: In the last century, there have been great advances to try to explain how psychic phenomena could occur, but there is still a great void regarding plausible biological explanations. However, in the last few years, there has been growing evidence concerning a biological basis that can allow for psychic functioning (Nolan, 2018; Radin, 2020; Wahbeh et al., 2021). I have identified nine possible situations from which people consider they have obtained psychic abilities, grouped into four categories:

1. *Hereditary*. Some people are said to be “psychic-born,” though sometimes the appearance of psychic abilities occurs in a later stage of their lives (Cohn, 1994). A genetic component could be argued if some of their blood relatives also possess psychic abilities, which is usually the case (Cohn, 1999).
2. *Stressful*. Refers to both psychological and cellular stress. The sources of psi that fall within this category are Unidentified Aerial Phenomena encounters (Vallee, 2014), Near-Death Experiences (Sutherland, 1989), deep psychological traumas (i.e., poltergeist cases) (Dixon, 2016), and being struck by lightning like some shamans (Madsen, 1995).
3. *Directed*. People who have never had any type of psychic ability and, through training, manage to succeed at psi tasks; for example, people from the STARGATE project categorized as “normal, nonpsychic individuals” (Puthoff & Targ, 1976), and meditators who spontaneously experience psi phenomena (Roney-Dougal et al., 2011).
4. *Induced*. This is usually achieved by taking psychedelic substances, such as DMT, LSD, or mescaline, among others (Luke, 2012).

The latter three categories involve situations that have a physiological effect on the individuals. So it seems likely that the different roads to supernormal abilities involve some common biochemical, regulatory, and/or epigenetic features.

Approach: Let us assume that there is a biological trait, most likely a brain structure, responsible for the experience and performance of psi phenomena. Considering the different scenarios by which people report acquiring such abilities, it is highly improbable that a different structure is involved in each case. Indeed, the most likely scenario involves the physiological convergence into a single brain region, perhaps the extra connections in the caudate-putamen area (Nolan, 2018). Furthermore, we would expect it to be the same structure in “psychic-born” people and in those who do not inherit psychic abilities but acquire them during their lifetimes. This suggests that the difference between inheritance and acquisition has more to do with genetic (or epigenetic) regulation than with being born with the “right genes.”

Proposal: A possible mechanism that could account for psi development is *genetic compensation*. In many cases, mutants for an essential trait do not show deleterious effects. This is achieved because, somehow, another gene (or genes) is *compensating* for the loss of function. This means that there are different “roads” that lead to the same phenotype, which

rely on the activation of regulatory pathways that lead to different gene expression patterns so that the individual keeps its robustness and develops normally (El-Brolosy & Stainer, 2017).

I propose two scenarios that relate to the appearance of psi. “Psychic-born” people possess specific genes that are expressed normally, perhaps in a specific brain region, which in turn favors an innate development of anomalous cognition and/or perturbation. On the other hand, “non-psychic-born” individuals may go through situations during their lifetime which effects are known to produce deep physiological modifications (i.e., *Stressful, Directed, or Induced*). These can lead to alteration of gene expression patterns in a way that could resemble genetic compensation through epigenetic changes and/or pathways involving different kinds of RNA molecules. Such modifications in gene expression may ultimately be reflected in a modification of the brain region that permits psychic functioning, which is most likely the same as in “psychic-born” individuals.

Conclusion: Recent studies with people prone to events that involve anomalous cognition are beginning to shed some light in what a biological basis for supernormality might be. Although a hereditary component seems to be involved, when we consider the different situations leading to psi development it seems unlikely that it all relies in specific gene variants (polymorphisms). Here, I have proposed a plausible mechanism that could allow the acquisition of psi talent through different scenarios. It involves changes in neuronal connectivity through modifications of gene expression patterns, induced by a wide range of situations. These findings, in combination with state-of-the-art methodologies in genetics, neuroimaging, and “omics” technologies, could allow us to have a better understanding of why psychic abilities arise in the first place, and why there is a large gradient of them when comparing different people. By expanding our knowledge on the biology of this phenomenon, perhaps we can finally answer why psi is so elusive.

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A Virtually Facilitated Investigation of Ostensible RSPK Disturbances During the Covid-19 Pandemic

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Introduction: Anecdotal reports were received from a middle-class family living in the Silicon Valley area of California regarding a series of ostensibly anomalous physical disturbances that were actively disrupting their lives while they remained quarantined in their small three-bedroom townhouse during the 2019 novel coronavirus disease (COVID-19) pandemic. In addition to spontaneous object movements and odd noises (e.g., knocks, bangs, and scrapings) with no readily identified source, instances of tactile sensation (e.g., pokes, brushes, and “scratches” on various parts of the body) and the discovery of ostensibly materialized liquids (water, soap, antibacterial gel, food coloring, and ink) were reported. Although various members of the family were present at times when the phenomena occurred, several of them seemed to occur in proximity to the family’s 14-year-old daughter.

In an effort to actively assess the situation and provide helpful assistance to the family while still complying with the necessary COVID-19 quarantine restrictions, we devised a virtual approach toward investigating the disturbances that was facilitated through personal interviews and a series of 18 telehealth sessions conducted with the family from September 14, 2020, to March 9, 2021, via livestream chats held over the Internet using the Zoom online calling platform. Psychotherapeutic techniques focused around stress reduction, developing/refining communication skills, intuition training, basic education about poltergeist phenomena, and other strategic interventions were employed during the telehealth sessions with the aim of guiding the family through the multiple psychological stressors they faced.

Examination of the number of reported disturbances as a function of time revealed a declining trend in the disturbances from their onset on June 17, 2020, up to their apparent cessation on February 4, 2021. Although it was not possible to make direct on-site observations of the claimed phenomena in this case, certain features and characteristics seemed to be present (such as object focusing and subtle symbolic themes possibly reflected in some of the disturbances), which were consistent with those found in other well-documented poltergeist cases appearing within the parapsychological literature. On this basis, there may be some reason for thinking that at least some of the claimed phenomena might have been genuine.

Apart from adding to the poltergeist case literature, this case seems to merit reporting for the following reasons:

- The virtual investigation approach taken in this case may be of use to other field investigators as a means of assessing cases they receive in the future under similar quarantine and social distancing conditions, as well as in circumstances where on-site visits may not be practically feasible (such as limited travel funding). It can also provide a useful means for multiple investigators who live in separate areas of the world to virtually collaborate together as a team on a single investigation at a distance.
- The therapeutic approaches used in counseling the family in this case, and the means of presenting them virtually, may be useful to other clinical parapsychologists engaged in field work.
- Reporting of the features and patterns of this case may be of value for poltergeist case surveys and reviews that may be conducted in the future.

This presentation will include the following four (4) perspectives from the team of four (4) co-authors and participating team members:

- L.A.: Opening and closing remarks, and the prospects and possibilities of virtually conducting field investigations under quarantine and social-distancing conditions.

- G.F.S.: The prospects of applying a phenomena-based, assumption-free approach (for which he has coined the acronym “AECKO”) for identifying potentially genuine cases out in the field, with the present case offering an illustrative example.
- B.H.: Addressing the clinical issues of the present case.
- B.J.W.: Analysis of the observational data collected during the present case.

Three Studies of the Relationship Amongst Twins Between Physiological Connectedness and Attachment

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Introduction: Parapsychological research into distant interactions between individuals seems to indicate that the bond between sender and receiver is important. Despite a wealth of reports concerning what appear to be remarkable examples of synchronous and telepathic experiences occurring between strongly bonded pairs of twins, there are very few empirical studies of exceptional experiences with twins (Playfair, 2002). To date, no study could be found that explored these phenomena in relation to the degree of attachment. A review by Parker (2010) found eight attempts to study (mainly telepathy) amongst twins under controlled conditions. Among these early studies, it is clear that only a few of their results seem to confirm the presence of psi amongst twins, and that most of the studies show significant shortcomings, such as the lack of selecting for those twins reporting paranormal experiences with each other. Moreover, many studies used only a few pairs of twins.

The present three studies, being part of a thesis at the University of Greenwich, were designed to investigate the ostensible relationship between telepathy and attachment between twins. By applying the concept of attachment from developmental psychology, these studies in parapsychology are an attempt to explore the degree of attachment between twins as a potential dependent variable relating to their apparent telepathic connection. From an initial pool of a little more than one hundred pairs of twins, thirteen pairs of identical and one pair of nonidentical twins were selected on the basis of their responses to the *Exceptional Experiences Questionnaire* (documenting their exceptional experiences, which included the twins sensing each other’s pain, accident, injury, or mood, even at a distance) and on the availability of both twins to take part in the study.

The twins were separated by several doors and walls, or, in the second and third study, by several floors. The test procedure required each of them to alternate in the role of sender, in which they were exposed to a shock or surprise stimulus, and in the role of receiver, in which

they were physiologically monitored for their electrodermal responses (EDR). Senders were presented with altogether five stimuli, one stimulus during each of the five trials per twin run. For each trial, the stimulus was presented during a 30-second period randomly chosen from eight possible such epochs within a four-minute trial. With a further 30 seconds added to establish baselines before and after each trial, this meant each trial would last five minutes. Graphs from 91 of the useable trials belonging to 14 pairs of twins, some participating twice, were analyzed by the lead researcher (GB), who was blind to the time epochs in which the stimuli had been presented by the researcher working with the senders (AP).

The task for the lead researcher was to identify a peak of the graph in the receiver's reaction that might approximately correspond to the midpoint in the period that the stimulus had been presented to the sender. In such cases, it could be taken as an indication of a physiological synchronous expression of connectedness between the twins. In 18 trials out of 91, these identifications corresponded to the actual exposure period for the shock or surprise stimulus — constituting so-called “hits,” compared to the MCE = 11.4 and was significant, $p = .043$ (one-tailed). The attachment data that twins contributed via the EEQ questionnaire indicated that all the twins in the current study seemed to experience similarly high levels of attachment. This consistency in strong and close relationships meant of course there was a lack of variance as concerns the hypothesis that attachment would predict the scores. The results of the *Experiences in Close Relationships — Revised* (ECR-R) indicated that all the twins had very low scores on attachment-related anxiety and avoidance in their relationships. The profiles of twins having many hits in the telepathy experiment as regards any aspects of attachment were not significantly different from those of the others. The data provides justification for a major study using this methodology with selected pairs of twins. Some major improvements in the design were suggested, one of them being also monitoring of the electrodermal activity for the sender, giving possibilities for a precise record of the timing and the effect of the shock stimuli.

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The Role of Cognitive Executive Functions in Individuals with Mediumistic Abilities

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Introduction: The claims of Spiritualist mediums to ostensibly communicate with the deceased have been a topic of research and debate for over 128 years, notably leading to the formation of the Society for Psychical Research (SPR) in 1882 and followed by the formation of other leading parapsychological societies (e.g., Parapsychological Association and Society for Scientific Exploration) around the world to examine and explore this issue (Alvarado, 2002; Irwin, 2014). Historically, most investigations with Spiritualist mediums have been proof-focused (Rock & Beischel, 2008), exploring whether the claims of discarnate survival by mediums is tenable. A growing body of evidence suggests that the accuracy of the information received by mediums from an alleged discarnate personality is often considered highly relevant by the intended recipient of the communication (Beischel & Schwartz, 2007; Roy & Robertson, 2001; Sarraf et al., 2020; Schwartz et al., 2003). A second approach is that of process-focused research (Rock & Beischel, 2008), which is an area gaining more attention and involves the researcher shifting the emphasis away from the direct evidential approach of “can” discarnate information be obtained to ask “how” this information is obtained and what cognitive processes are involved?

With this in mind, a study was conducted to explore what, if any, cognitive executive functions mediums report using during the demonstration of alleged communication with a discarnate personality. Executive function is a term used to encompass a set of higher-order cognitive processes considered necessary for the normal day-to-day functioning of individuals in their pursuit of a desired goal (Cristofori et al., 2019) and are essential for healthy cognitive, social, and psychological development (Lunt et al., 2012). Arguably, these higher-order functions may also be necessary for the task of “mediumship” that necessitates a focused awareness by the medium of their internal sensory stimuli, ostensibly from a discarnate personality, while simultaneously inhibiting potentially distracting internal thoughts and external information (Stanford, 1993). This idea is supported by Braud (1975), who suggested the need for participants in studies exploring psi-conducive states to have significant executive functioning ability to intentionally reduce sensory noise processing while increasing awareness of their internal processes and feelings. However, at present there are no known studies that have specifically explored this area.

Understanding which components of executive functions may be important in mediumistic communication will help shed light on the specific cognitive processes involved and in turn will lead to a better understanding of the phenomenon. In addition, such information may be used to explore whether mediums exhibit distinct differences in such executive functions compared to nonmediums and then whether training to enhance such executive functions could improve and enhance the communicative bridge between the medium and the discarnate personality.

Methods: Seventeen internationally recognized mediums from across the UK, US, Australia, and Germany, each holding accreditation from Spiritualists’ organizations such as the Spiritualists’ National Union and the National Spiritualist Association of Churches, were approached and agreed to participate in the study. In the first stage each medium was provided with

information regarding the aims and objectives of the study and asked to complete a demographic questionnaire, before providing informed consent. At the second stage each medium was invited to participate in a semi-structured interview which was recorded. During the interview the medium was given an opportunity to explain the mental processes they used to obtain a connection with a discarnate personality and their procedure for maintaining that connection so as to obtain evidential communication for a recipient. The audio from each interview was transcribed and imported into NVIVO software, where the content of the interview text was compared between mediums. Using a thematic analysis approach (Braun & Clarke, 2006) relevant sections of the text was coded to allow themes to be generated and analyzed relating to the possible role executive functions may play in the demonstration of mediumistic communication.

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How Is Fasting and Vegetarianism Perceived to Support Psi Among Adepts?

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Introduction: Many spiritual traditions include accounts of miraculous events and supernormal powers that appear to be inexplicable within current scientific understanding, and those accounts are sometimes associated with fasting and vegetarianism. For example, shamans may fast to support apparent psi-like abilities such as healing and controlling the weather (Wright, 2013), and many yogis who are strict vegetarians are also said to exhibit powers such as the ability to read minds and control wild animals (Lamb, 2011). Some authors have related fasting and vegetarianism to the development of both spirituality and psi (e.g., Aivanhov, 1982; Carrington, 1920; Cousens, 2009). However, there has so far been little empirical research into this potential relationship; for example, none of the topics of diet, fasting, and vegetarianism appear in any substantial form in prominent summaries of psi research (e.g., Cardeña et al., 2015; Irwin & Watt, 2014; Radin, 2013; Vernon, 2020). In this paper, we present an analysis of interviews with seven “psi adepts” (those who practice psi in a professional capacity) to examine their understanding of how fasting and vegetarianism affect their sensitivity to psi.

Methods: We recruited seven participants known to the authors and to Dr. Helané Wahbeh (Institute of Noetic Sciences), using purposive sampling. Qualification for inclusion was that participants should be established practitioners of apparent psi abilities and practicing fasting and/or vegetarianism in support of their work. Data collection involved a semi-structured interview using videoconferencing with each participant with a mean duration of approximately one hour. Framework questions sought to ascertain the nature of participants’ dietary practices; the effects such practices had on their lives, in particular, purported psi abilities; and, finally, possible underlying reasons for these effects. Interview data were subjected to thematic analysis, following the stages outlined in Braun and Clarke (2006) of familiarization, initial coding, and theme construction.

Ethics: Ethical approval was secured from the University of Northampton. Anonymity was waived through the consent process since all participants have public profiles as psi practitioners. The use of videoconferencing was necessary because of pandemic restrictions but

also alleviated safeguarding concerns and helped facilitate interviews where participants' locations were distant from the primary researcher. Participants could decline to answer questions and withdraw consent for up to seven days following interview.

Results and Discussion: Analysis revealed a thematic structure comprising four themes, seven subthemes, and seven sub-subthemes. The first theme shows that participants use fasting and vegetarianism to support their manifestation of purported psi. Some use diet to provide a baseline receptivity to psi and fast to enhance psi when needed, echoing Lamb's (2011) account of Hindu ascetics whose fasts build on vegetarianism as preparation for *siddhis*. The second theme shows that a majority of participants perceive fasting and vegetarianism as enhancing psi through a positive effect on cognition. The third and fourth themes focus on fasting and vegetarianism respectively; subthemes examine the nature of each practice and reasons for how this might support psi. Four reasons for how fasting and vegetarianism might support psi were considered most important: purification and reasons related to the gut for fasting; and health benefits and purported "subtle qualities" of food for vegetarianism.

Purification is cited by the participants who fast in common with practice within diverse spiritual traditions, such as Shamanism (Walsh, 1994) and Christianity (Thompson, 1997), and authors of spiritual and psi development, including Carrington (1908) and Aivanhov (1982). Two participants suggest that a gut emptied through fasting might support psi with intriguing correlates to recent research highlighting a link between nutrition, gut health, and positive mental functioning (Oriach et al., 2016).

All participants suggest that vegetarianism benefits health which, in turn, benefits psi. All but two emphasize whole foods. One participant employs supplements to target discrete psi-related functions and mitigate against harmful inflammation she believes is caused by psi. If supported by further research, this last finding could lead to dietary recommendations for those practicing psi who may otherwise be putting their health at risk, such as in Beischel et al.'s (2019) study on mediumship and ill-health. Just over half of participants suggest that food is associated with subtle qualities that impact on psi: negatively in the case of meat; or positively for plant-based food (consistent with Blavatsky, 1889; Carrington, 1912; and Cousens, 2009).

This study of the lived experience of psi adepts supports previous literature in suggesting a relationship between dietary practices and psi. Planned survey and experimental research will explore this putative relationship to test whether fasting and vegetarianism may help improve performance in psi tasks, and offer health benefits for psi practitioners.

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Accuracy and Neural Correlates of Blinded Mediumship Compared to Controls

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Introduction: Mediumship is an ancestral practice whereby mediums can access information they should not be able to access based on the materialist paradigm. During advanced meditative practice or mediumship sessions, unusual perceptions can arise, including the sense of receiving information about unknown people who are deceased. As with meditation, this mental state of communication with the deceased involves calming mental chatter and becoming receptive to subtle feelings and sensations. We show that it is an ideal field of study for testing the hypothesis that consciousness is nonlocal, as it is (1) widely practiced, (2) involves extreme emotions — such as the ones associated with death — which usually trigger the most spontaneous paranormal reports, and (3) there are also prior, reputable studies. We review three experiments we performed on this topic.

Experiment 1: In our first experiment, psychometric and brain electrophysiology data were collected from six individuals who had previously reported accurate information about deceased individuals under double-blind conditions. In the first task, the participant was given only the first name of a deceased person and asked 25 questions. Mediums' accuracy was rated above chance expectation in this blinded test. The correlation between accuracy and brain activity during the 20 seconds of silent mediumship communication was significant in frontal theta for one participant. These differences suggest that the impression of communicating with the deceased may be a distinct mental state distinct from ordinary thinking or imagination.

Experiment 2: In our second experiment on this topic, we improved experimental design to increase statistical power. We invited 12 mediums to see if they could tell if a person was alive or dead based solely on a brief examination of his or her photograph. Participants examined 404 photographs displayed on a computer monitor, one photo at a time, each shown for a maximum of 8 seconds. At the time the experiment was conducted, half of the individuals in the photos were deceased and half were alive. The images in the two classes were balanced using 11 image characteristics so that not a single characteristic could help with classifying the images. Participants were asked to indicate if they thought the person in a photo was living or deceased by pressing an appropriate button. Overall, the mean accuracy on this task was 53.6%, where 50% was expected by chance ($P = .005$, two-tailed). Statistically significant accuracy was independently obtained in 5 of the 12 participants. We also collected 32-channel

electrocortical recordings and observed a robust difference between images of deceased individuals correctly vs. incorrectly classified in the early event-related potential at 100ms post-stimulus onset. Our results suggest that some individuals can intuitively assess mortality based on some as-yet-unknown features of the face.

Experiment 3: In our third experiment, a classification task asked participants to look at 180 facial photographs of deceased individuals (photographs were taken years prior to their deaths) and guess the cause of death from three equiprobable categories: heart attack; death by firearm; or car accident. Electroencephalogram (EEG) and electrocardiogram (ECG) data were simultaneously collected during the task. The participants included individuals who claimed “mediumistic” (psychic) abilities and controls who claimed no mediumistic ability. Pooled data showed accurate guesses for the cause of death ($p = 0.004$), and control subjects were primarily responsible for this effect ($p = 0.005$). EEG and ECG differences were found between the mediums and controls. Control participants had larger amplitude event-related potentials (ERP) following the presentation of the images than the mediums, between 80 and 110 ms, and between 200 and 350 ms. This result could be interpreted as reflecting greater attention and less response inhibition by controls as compared to the mediums.

Discussion: We explain how these results, suggesting that consciousness is not limited to the brain, have important consequences for our model of the world. We may interpret this result as mediums accessing global consciousness shared by all living beings and matter. Our results suggest that we are connected to each other in ways not fully explained by the materialist paradigm. Although these results do not yet demonstrate that consciousness is primary, it indicates that the materialist paradigm is incomplete at best.

Coin-Based Apports: A Methodological Approach to Study Non-Mediumistic Recurrent Physical Anomalies

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Introduction: Large-scale visible psi phenomena are difficult to encounter, and even harder to replicate in controlled environments. Exceptional experiences that include the anomalous physical and observable perturbation of objects are found all along the history of parapsychology, particularly in physical mediumship studies, and related to some outstanding individuals.

Furthermore, there have been enough well-designed studies regarding gifted individuals and unique locations since the beginning of the twentieth century to obtain some understanding of

the phenomenology of large-scale psi. Thanks to previous research, parapsychology has obtained a set of criteria that may point towards the origin and classification of some anomalous physical phenomena like macro-psychokinesis, hauntings, recurrent spontaneous psychokinesis (poltergeists), and apparitions.

But even the most psi-enthusiastic researcher would tread carefully attributing scientific validity to the most fringe physical phenomena, such as levitation, materialization, and teleportation. The case we are studying belongs to this last category.

Approach: In parapsychology the term “apport” is used to describe the paranormal appearance or transference of objects to other locations (Cardeña et al., 2015), and presumable instances of this phenomena have been documented mainly in physical mediumship cases. Nonetheless, most of these studies were registered during the Spiritualism apogee (1850 to 1920), investigating some of the most famous mediums of their age: Indridi Indridasson (Haraldsson & Gissurarson, 2015), Franek Kluski (Weaver, 2015), Eusapia Palladino, Daniel Home, and the Fox sisters, (Irwin & Watt, 2014), among others.

Apports have been scarce and difficult to record in the last century; nonetheless, it has happened in the presence of sitter groups like the *Felix Experimental Group* (Braude, 2016) and the *SORRAT* (Grattan-Guinness, 1999). Individuals unrelated to mediumship have also been studied regarding their mediumistic-like phenomena, like the table-tipping of Ariel Farias (Gimeno, 2015; Gimeno & Burgo, 2017), the thoughtography of Ted Serios, and the apports of Amyr Amiden (Krippner et al., 1996; Krippner, 2011) and Katie “The Gold Leaf Lady” (Braude, 2007). But alas, well-documented apport cases in the last 100 years may be counted on the fingers of one hand.

The case at hand developed in Mexico City, surrounding a 55-year-old married man whom we will refer to as “HM,” unaffiliated with mediumship, and with presumably recurrent apports since 2016. The apported objects are usually well-preserved coins from Mexico and other countries, but medals, dead flowers, and even apples have been reported to appear as well. After the onset of the phenomena, he has emotionally journeyed through fear, curiosity, and finally acceptance. He also has physically traveled to China, India, Turkey, and Japan, studying acupuncture and distant healing, in his search for answers.

He even has taken parapsychological courses at the Rhine Education Center and the Koestler Parapsychology Unit. Finally, he has mentioned on multiple occasions that he has no interest in economic gain or fame, and we believe he is truly driven by scientific inquiry.

Proposal: Based on previous research, we have proceeded with a “cooperative inquiry group” paradigm, including HM in the design, operationalization, and definition of the variables of the study.

Phase 1 of this investigation will involve both qualitative and quantitative measurements, including:

- Installation of 6 HD cameras with infrared (15 mts.) and audio recordings in his home
- Video analysis of the cameras' recordings and supplementary videographic material provided by HM
- Unstructured interviews with HM, his family, and employees regarding cultural milieu, family history
- Psychometric tests
- Phenomenology of each apport, including object's description, date, time, mood, location, and subjective perception of the experience

Phase 2 will probably include the installation and analysis of other sensors, like wall thermometers, gaussmeters, T-RNGs, the addition of physiological sensors, and the physical and geological analysis of the apported objects.

Conclusion: The validity and classification of the case is difficult to evaluate at this point. The description of the events is congruent with some of the criteria in the phenomenology of poltergeist cases, but there are also elements of spiritual emergency. Furthermore, there are financial and spatial limitations due to the COVID-19 pandemic, and as exploratory research, the experimental approach for the next phases may change during the evolution of the study. Nevertheless, the full cooperation of HM, the presumable recurrency, and the field implications of the case are enough to be worthy of research.

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Margaret Mead and the Parapsychological Association: How the PA Finally Joined the AAAS

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Introduction: This presentation consists of a dramatic re-creation of anthropologist Margaret Mead (1901–1978), who in 1969 strongly endorsed the Parapsychology Association's entry into the American Association for the Advancement of Science (Dean, 2016). A first-person costumed presentation discusses her views on connections between parapsychology and anthropology 52 years ago, followed by an out-of-character discussion of related research today.

I've done multiple living history Chautauqua performances in various US locations and a cameo appearance of parapsychologist Eleanor Mildred Sidgwick at the 1995 PA conference in Durham, NC. Sally Rhine Feather still talks about it. I'd be pleased to present Margaret Mead endorsing parapsychology at the 2021 PA/SSE online conference.

The re-creation is about 15 minutes, followed by questions answered in character. I then break character to answer questions as myself. What follows is a synopsis of the relevance of Margaret Mead to the subject material of this conference, to be presented in dramatic format.

In 1969, it was not at all certain that the PA would be accepted into the AAAS on its fourth attempt to do so, despite the unswerving efforts of PA past President Douglas Dean. At a meeting where the vote would take place, upon hearing negative comments, Margaret Mead (1969, as cited in Dean, 2016) stood and said the following:

For the last ten years we have been arguing about what constitutes science and scientific method and what societies use it. We even changed the bylaws about it. The PA uses statistics and blinds, placebos, double blinds, and other standard scientific devices. The whole history of scientific advance is full of scientists investigating

phenomena that the establishment did not believe were there. I submit that we vote in favor of this Association's work. (pp. 53)

Her ringing recommendation helped to get the required number of votes. This was not the first or last controversial statement ever made by Mead. She was already credited with influencing the 1960s sexual revolution, and Dr. Benjamin Spock's books included her child rearing beliefs. Married three times, she also had romantic relationships with women. Mead questioned traditional gender roles and any research that upheld white racial superiority. In her sixties during the 1960s, she both preceded and was part of a counterculture world view. Her support of parapsychology was part of her overall perspective.

From 1946 to 1969, Mead was an American Museum of Natural History curator. In 1948, she was elected to the AAAS, serving various roles. Highly visible on campuses in her cape and walking stick, she taught at The New School, Columbia, Fordham, and University of Rhode Island. In 1960, she was American Anthropological Association president.

In the later 1960s, Mead's gender research started influencing a growing feminist movement. Her landmark book, *Coming of Age in Samoa*, discussed child rearing, personality, and culture. Mead's other influential book, *Sex and Temperament in Three Primitive Societies*, questioned the universality of western gender roles.

Mead thought research supporting racial superiority in intelligence was flawed. In "The Methodology of Racial Testing: Its Significance for Sociology," she said that you could not prove that test scores correlated with race. She argued the difficulty of measuring environmental effects (family structure, socioeconomic status, language exposure) and felt that language barriers created major testing problems (Mead, 1926).

In her anthropological work, Mead encountered shamanic practices and activities relating to PA research. In 1974, five years after her 1969 speech supporting entrance of the PA into the AAAS, she was elected AAAS president. It appears that her views on research in parapsychology did not prevent colleagues from seeing her as an innovative researcher in anthropology.

In 1979, Mead posthumously received the Presidential Medal of Freedom at an American Museum of Natural History program. The citation read: "Margaret Mead was both a student of civilization and an exemplar of it. To a public of millions, she brought the central insight of cultural anthropology: that varying cultural patterns express an underlying human unity. She mastered her discipline, but she also transcended it. Intrepid, independent, plainspoken, fearless, she remains a model for the young and a teacher from whom all may learn."

Margaret Mead was a figure whose insights into human behavior influenced the thinking of the 1960s and remain part of that period's cultural legacy today. It might have taken a lot longer for the PA to gain AAAS membership if not for Margaret Mead.

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Poltergeist/RSPK Quantitative and Qualitative Study from Antiquity Until Now

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Introduction: Many studies/books have been published about poltergeists, presenting cases and their characteristics — Flammarion (1923), Thurston (1953), Roll (1972), Gauld and Cornell (1979), Huesmann and Schriver (1989), Biondi and Garatelli (2011), and Healy and Cropper (2014), to name a few. Main quantitative studies have been done at a time where the computer was in its infancy and so with only printed material. Today it seems that very few consolidated databases are available, and the new cases are not filed or are filed in different databases and formats. However, the information available is huge, and with enough aggregation it could help detect some trends over the different periods or by geographics and help qualify the credibility/authenticity of the cases and their different characteristics. At the end, this could give some important insight into the anomalistic arena and the research on the nature of reality.

Method: In order to conduct a quantitative and qualitative study on poltergeists, a set of representative cases has to be found (a sample with enough cases and with a diversity on period and geographics).

To characterize each case, a set of parameters has to be defined (e.g., presence of raps, object movement, incendiary effects, poltergeist agent detected, materialization, apparition, etc.).

The more advanced study on this is the one conducted in Gauld and Cornell (1979), as it provides a study counting 500 cases with 63 parameters for each, from year 500 to 1975 and with an international view (46 countries, even if there is a tropism on English cases). Interestingly, each case has attached a level of testimony and a level of detail. So, starting from

this book a database has been built, completed with cross-references of other books and articles.

Using these data, a study of the evolution of the different characteristics of the poltergeist/RSPK cases through time and geographics has been made. We also did an estimated counting of the different cases documented through the different countries (Europe, USA, and Australia mainly).

Results: More than a thousand cases have been referenced, from which more than 700 seem to have serious documentation (reference to a paper, a book, some articles in newspaper/magazine with enough details).

With the 500 Gauld and Cornell cases, the analysis per geographic/period shows:

- The homogeneity of the characteristics through period and geographics area, even if some differences appear (which could be explained by belief/cultural evolution on time, cultural difference between countries)
- The strength of some “strange characteristics” if we compare them with the level of testimony (the better the level of testimony, the more these characteristics are represented)
- The evolution of the interpretation of the phenomena per period

The progression of the number of cases per year in this sample has been evaluated (e.g., 2 per year on the 1940–1975 period).

Then, deeper research has been conducted to analyze strange characteristics across different cases, using the detail description/story of the cases.

Discussion: Moving from there, it would be interesting to complement this database with cases from 1975 until today. From our evaluation, 60 documented cases which represented 1,3 cases per year could be added on this period. It has also to be completed with more cases on Asia, Africa, and South America to be more representative.

One question today is how the collect of poltergeist/RSPK cases in different areas of the world could be improved (for example, in France and Italy we have an estimate that 2 documented cases per year could be identified in each country, a number from which we are far today). Also, it could be useful to define which information should be collected for each case (on both psychological and physical events) and in which format it will be stored in order to be able to share it without privacy problem.

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Energies and Forces Involved in Small Semi-Replicable Potential Macro-PK Effects

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Introduction: In a paper published in the *Journal of Scientific Exploration* (Dullin & Jamet, 2018), research on historical perspectives concerning the study of psychokinesis on lightweight spinning objects, and a methodology for conducting macro-pk tests on this kind of target in a nonconfined environment, were presented.

In a paper published in the *Journal of Parapsychology* (Dullin & Jamet, 2020), new results were presented with two sets of experiments: reference experiments with a static bench, where the motion of the target is obtained with the airflow issuing from a pump, and PKer (volunteer practicing psychokinesis) experiments (with a new portable bench), where the motion of the target inside the bench is triggered by the PKer. The comparison between the airflow speeds around the target in the two sets of experiments showed that the tangential airflow speeds in the PKer experiments were 10 times lower than the required tangential airflow speeds to start the target moving in the reference experiments.

This tends to prove that the motion of the target in these experiments cannot be attributed to thermal/aerodynamic effects. Compiling all the facts from the beginning of this research, and discarding the different classic physical causes of the movement, the hypothesis of some macro-PK effects has been placed.

In order to better qualify these effects, this paper presents the analysis of the energies and forces (torques) involved in the two PKer experiments. The results will be compared also with others' experiments using other kinds of targets.

Precedent evaluation about energy involved in small PK has been done by Dr. Antonio Giuditta in experiments with a torsion pendulum at a distance of one meter from the participant (Giuditta, 2014).

Methods: To evaluate the energy and forces involved in these effects, the following parameters are calculated:

- The moment of inertia J of the spinning target
- The maximum rotational speed reached W_{max}
- The total friction torque T
- The maximum and average acceleration during the speed-up

The target (as in Dullin & Jamet, 2020) is formed of three stacked hemispheric plastic domes



placed at the top of the stem of a carousel candle (Figure 1) with a total weight of 7,35g.

Fig. 1 Mobile device used as a target: 3 stacked plastic domes on the top of a carousel.

Using these parameters, the following physical quantity are evaluated:

- The maximum kinetic energy reached.
- The average acceleration torque, which represents the torque needed to speed up the target.
- The total “motor” torque.

Results: The results deduced for the two PKer experiments show that the energy involved is in the range of the microjoule and the torque close to 0.1 micronewton meter. This is to be compared with the work of Dr. Antonio Giuditta, who evaluated the perturbation of his mobile device at 0.1 microjoule at one meter distance from the participant (Giuditta, 2014).

Many other experiments (more than 400 with 7 experienced PKers) have been conducted in different contexts and with different objects.

The maximum values reached were in the range of 20 microjoules for the kinetic energy and 3 micronewton meters for the PK torque, either by a very fast spin of 210 deg/s and an acceleration of 1.2 deg/s/s of a light target, or by a slow spin of 11 deg/s of a heavy target of 500g. The videos will be presented at the conference.

Discussion: These first results give a range of semi-repeatable effects situated between micro-PK and larger macro-PK effects (as in poltergeist or exceptional medium cases), the latter being more difficult to study because of their spontaneous character and their elusiveness. It could be worth studying further these small potential macro-PK effects to progress in the comprehension of these anomalous perturbations.

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Panel: J. B. Rhine and the Importance of Connection—J.B. Rhine: Letters 1923-1939

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Introduction: J.B. Rhine was all about connections, in his work as well as his extensive correspondence. From the earliest days of the work, he reached out to figures in the field of psychical research, writing to such people as William McDougall, his most important mentor, Gardener Murphy at Columbia, professors at Harvard, Stanford, the universities of Wisconsin, Michigan, Minnesota, Princeton, and smaller institutions, to psychical researchers in Europe, to medical doctors, engineers, psychologists, to mediums (Eileen Garrett), to share theories, methods and respond to similar inquiries from them. Rhine's letters from the 1920s and early 1930s illustrate the importance of connection within the field.

Rhine's importance in the history of parapsychology lies not only in the technical contributions and methodology he contributed to the field. By establishing parapsychology as a distinct scientific discipline, he created a coherent community where professional parapsychologists could exchange views on methods, procedures, standards, problems, and challenges facing the work.

While England's Society for Psychical Research drew a membership of like-minded individuals in the late 19th Century, the SPR "never coalesced into a firm and continuous scientific movement in which data, theory, and method could all dovetail and support one another."

This looseness of association was in place when Rhine came into psychical research in the early 1930s. "He was the nucleus of what became a reference group of professional parapsychologists, ones who agreed not only on the application of scientific method in general, but also in detail on the choice of procedures, problems, standards, language, and audience. Through his influence, workers in the field came to share priorities and techniques, as well as a commitment to the field as a whole."

Rhine was able to exert this influence because of the credentials earned within an academic setting at Duke University, working under William McDougall, one of the most important figures in psychology at that time, and for publishing the ground-breaking monograph, *Extra-Sensory Perception* in 1934.

Rhine recognized early the importance of atmosphere and attitude in test situations. His capacity to connect with students and subjects helped to find good test subjects and motivate high scoring. His ability to energize and motivate others led to a strong testing team who verified his findings and extended them.

Journal of Parapsychology

In the mid-1930s Rhine recognized the need for a forum where researchers could publish their work, exchange ideas and share research, the successes as well as the challenges and problems. In 1937 he and William McDougall launched the *Journal of Parapsychology* as a peer-reviewed journal to address such issues. The JP has been in continuous publication since, approaching its 85th year in 2022.

The Parapsychological Association

Rhine had long wanted members in the growing field of parapsychology to have an organization that could convene to present research and communicate directly with one another about activities in the field. In 1957, he founded the Parapsychology Association, encouraging it as an independent international institution that meets annually.

The Summer Program at FRNM/Institute of Parapsychology

Rhine's recognition of the importance of community in the field included concern for its future. In the 1970s, Rhine and his colleagues instituted a summer program offering an 8-week curriculum of classes in parapsychology, covering the origins of the field, methods, and techniques. It became a training ground for future psi researchers, under such teachers as Robert Morris and John Palmer.

Autonomy and Bonding as Basic Needs and as Structural Determinants of Exceptional Experiences

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Introduction: Human experiences that deviate from conventional convictions about reality are referred to as exceptional experiences (ExE). Since its foundation in 1950, the Institute for Frontier Areas of Psychology and Mental Health (IGPP) has offered counseling for people reporting ExE (Bauer et al., 2012).

Inspired by Metzinger's theory of mental representations, a separate *model of phenomenon basis classes* (MPBC) was developed to classify ExE (Fach, 2011, 2014). The MPBC allows distinguishing ExE-patterns in terms of relations of self and world as sub-models of an overall phenomenal reality-model (Atmanspacher & Fach, 2019). The MPBC is ideologically neutral and open to different interpretations of the ontological status of phenomena. Statistical analyses of 2356 counseling cases show six ExE-patterns in the framework of the MPBC as typical counseling requests.

In the context of counseling, ExE often indicate conflicts between humans striving for autonomy and bonding. Autonomy and bonding can be considered as basic human needs and, in systems theory, as fundamental complementary conditions of the existence of all biological systems. System theoretical considerations also support the thesis that autonomy and bonding are structural determinants of ExE (Fach, 2021). The six empirical ExE-patterns form two continua of internal and external phenomena: The internal continuum begins with phenomena in the self-model that are related as *extrasensory perceptions* to persons and events in the world-model and are thus a subtle form of bonding. In the stage of *internal presence and influences*, bonding in the self-model increases and threatens personal autonomy. In the scenario of *mediumship and automatisms*, internal bonding seems to displace the autonomy of the self-model into the world-model through psychophysical dissociation. The external continuum starts with a perception of *meaningful coincidences* in the world-model, which seem to be autonomously arranged and addressed to the self-model. In the stage of *poltergeists and apparitions* increased autonomy is overriding lawful bonding in the world-model. In the case of

nightmares and sleep paralysis, the bonding between the self-model and the physical body (as part of the world-model) is severed by psychophysical dissociation.

Client types identified on the phenomenological basis of the six ExE-patterns by cluster analysis correspond to social bonding and partnership in significantly different ways. Biographical analyses consistently show links between ExE and negative or traumatic childhood bonding experiences. On the background of attachment theory, empirical research describes different bonding styles of adults. Secure attachment in infants is reflected in a secure-autonomous bonding style. For people with an insecure-dismissing attachment representation, a partnership can offer factual support but no emotional security. Because too much closeness leads to negative feelings, they emphasize self-responsibility and independence. In contrast, people with an insecure-enmeshed bonding style yearn for closeness. However, a simultaneous lack of autonomy and trust leads to conflictual relationships in which they oscillate between positive and negative feelings and cling to their partner. Systematic relations between ExE-patterns and insecure bonding styles were identified. We found a relationship between dismissing bonding and the continuum of internal ExE and enmeshed bonding and the continuum of external ExE. The ExE-patterns with psychophysical dissociation phenomena at the end of both continua correspond most clearly with an insecure-disorganized bonding style.

The approach presented here belongs in the context of a still developing clinical parapsychology (Kramer et al., 2012) that cares for people with stressful ExE. If counseling helps clients to recognize and understand that recurrent and distressing ExE are rooted in their life history and bonding style, it can serve as a bridge and motivate them to engage in psychotherapy. Therapy here does not mean treating ExE as mental disorders or as problems per se. With the system-theoretical paradigm of autonomy and bonding as complementary structural determinants that constitute human life as basic needs and function as organizing principles of mental representation, we gain a new understanding of ExE. Exceptional phenomena can be understood as mental representations of self-organized processes that, at the level of organismic and psychophysical wholeness, respond to and strive to balance a pronounced mismatch of autonomy and bonding in the psychosocial sphere of the individual. Therefore, people who report persistently distressing ExE need to be supported to adequately perceive, meet, and protect their basic needs (Belz & Fach, 2015). In particular, positive relatedness experiences in counseling and therapy can promote the integration and balance of autonomy and bonding in clients' daily lives, which should reduce their disposition to stressful ExE in the long term.

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New Subtle Energy Associated with Creation, the Torus, and the Plasma State of Matter

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Introduction: Nikola Tesla is well known for his statement, “If you only knew the magnificence of the 3, 6 and 9, then you would have the key to the universe.” Through synchronicity, the answer to that question came to me. The answer is related to the basic structure for the creation of matter, the torus. Through testing, resonance with the energy of centering and harmony is embedded in the torus structure. The energy is within the numbers of 3, 6, and 9. The same energy is also within the key symbols associated with creation: the Sanskrit Aum, the Chinese Bagua, the yin yang symbol, the Reiki power symbol, and Marko Rodin’s torus as represented mathematically within his Vortex Math. The BioGeometry BG3 quality is

embedded in the symbols, but the energy is not BG3 but a new energy which can be detected by a new tool in resonance with the 3-6-9 subtle energy.

In the field of plasma physics, there are monatomic elements, often known as Ormus and GANS (Gas in the Nano State), and the fourth state of matter. To date, there has been no good way to detect these elements. The tools used to measure 3-6-9 subtle energy qualities will detect and measure the energies of these monatomic elements. GANS has the qualities/properties of the torus structure. Different geometric patterns of GANS will also create fields that have BG3 and 3-6-9 subtle energy qualities. These energy qualities can be moved with conscious intention. The movement can be measured. The moved energies can be shown to activate water.

Understanding the energies and our abilities to work and change them gives us more information as to who we are and how we are all connected.

Methods: The tools to measure resonance from the fields of BioGeometry and Radiesthesia were used to detect and quantitate subtle energies qualities. The BG16 tool from BioGeometry was used to detect and measure BG3 (BioGeometry 3). A new tool will be described which detects and measures the 3-6-9 subtle energy qualities. The BG3 Ruler was used to quantitate energies. The GANS/ormus, was prepared by adjusting pH of a solution of Dead Sea Salt. Vials of Ormus were used to create BG3 and 3-6-9 fields. The torus and creation symbols were drawn using the knowledge of spiral motion in the vortex of the torus.

Results: The torus structure, the 3,6,9 within the structure, the symbols of Aum, Yin Yan Reiki Power Symbol, Bagua, and Rodin's Symbol of Enlightenment showed both BG3 and 3-6-9 subtle energy qualities. The drawing of the symbols brings forth the BG3 and 3-6-9 qualities. The symbols will then have harmonizing qualities.

GANS materials have 3-6-9 subtle energy qualities, but not BG3. However, the fields that are created from geometric patterns from vials of GANS produce fields which contain both BG3 and 3-6-9 subtle energies. These energies were shown to activate water, as evidenced by the increase of BG3 levels of the water. It was also shown that, with consciousness, the fields created by either symbols of creation or with GANS vials, could be moved to different locations. The energy in the new locations was shown to be able to activate water.

Discussion: The results have a number of key implications. The results support the concept of creation being connected to the double torus structure. Both the BG3 and 3-6-9 subtle energy qualities have harmonizing qualities, which are a precursor for healing. The results also will accelerate growth in the study of GANS since GANS can now be detected with the 3-6-9 tool, and the fields created by GANS will now be able to be measured. There is now further evidence as to consciousness/intention being able interact with matter and fields by the evidence in this presentation.

Decolonizing Parapsychology

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Introduction: How does parapsychology continue to perpetuate colonial ideologies? Certainly, with the limited number of researchers in the field coupled with the underfunded institutional support for the discipline, this question may strike many as not pertinent or even unrelated to the study of psi. On the contrary, if parapsychology wants to forge new connections with other-than-Eurocentric worldviews, while perhaps even increasing the mainstream acceptance it has long sought after, this issue, now more than any ever, should arguably be the leading problematic in the field, after only, perhaps, investigating psi itself.

The phrase ‘colonial ideologies’ signifies several historical and present-day values and norms that are implicit in the practice of scientific disciplines as well as their institutional sponsors (Dussel, 2012). They are the ways in which our knowledge practices, subjectivities, and own positionality color and shade the research that we conduct. In stronger terms, these ideologies do not just alter the object or subject under study but, necessarily, subjugate, subordinate, and erase other voices, knowledges, and lines of inquiry.

Critical Methods: The term ‘decolonize’ generally comes out of postcolonial studies inaugurated by thinkers like Frantz Fanon, Edward Said, and Gayatri Spivak. The central tenant of postcolonialism is to critically examine the ways that colonizers pillage and install new material practices and values in the conquered community (Bashara, 2021). An adjacent pursuit, the field of critical psychology, a discipline that pursues those very aims listed above but does so, predominantly, under the auspices of psychology, is a relatively recent historical development. Ian Parker (2015) is usually given credit for helping codify critical psychology into a thematic pursuit. Yet, many of the conceptual and interventive tools that critical psychology employs go back even further into the middle of the twentieth century and before. Most notably, the work of the poststructuralist thinkers, that of Michel Foucault, Jacques Lacan, Luce Irigaray, Julia Kristeva, and Jacques Derrida, among others, has helped shape a larger notion of critical inquiry: a style of interventive thinking that examines typically hidden or assumed forms of ideology that structure the individual and society.

Take, for example, the work of Felix Guattari (cf. 2013, 2016). He is best known for his work with the philosopher Gilles Deleuze wherein they co-authored two well-known tomes entitled *Anti-Oedipus* (1983) and *A Thousand Plateaus* (1987). In these books, their overall aim was to not only criticize the way that traditional psychoanalysis works to uphold the ideology of capitalism, for instance, but also to offer a substantive or normative alternative to the subjugating effects of this agenda – this they termed schizoanalysis. The conceptual interrogation provides a style or even a template for how parapsychologists might work to

disentangle the ways in which the field has become the unknowing servant to ideologies that remain just below the surface, so to speak. Parapsychology has followed the methods of the natural sciences for a century, and, in terms of scientific legitimacy, public acceptance, and institutional support, this has been a failure by all accounts (Reber & Alcock, 2019). This says nothing, of course, regarding the scientificity of the discipline, how scientific it has been regarding following these very methods, as we know that the experimentalists in parapsychology have been overly cautious and rigorous with designs and conclusions (Cardeña, 2018).

A recent trend in psychology has been the call to decolonize the discipline, perhaps most typified in the recent conference held by Columbia University (Teachers College, 2021). The speakers offered tips for understanding the ways that, for example, in clinical supervision, supervisors may unwittingly be passing their values onto their supervisees by, put very curiously, not holding space for dissenting voices or alternative approaches. Even research practices in psychology that parallel to an extent those of parapsychology were held up to critical questioning: the fact that white supremacy is perpetuated by adhering to outdated protocols that were deemed the most scientific in the past while, at the same time, quashing dissenting, non-Eurocentric, or indigenous methods at investigating the world. The presenters were clear: the process of decolonization is a long one, and psychology (and we could assume, here, parapsychology by extension) has a lot of work to do.

Discussion: Decolonization is not just a political or social issue, as it may appear at first blush. Rather, critically examining the ideologies that are assumed as categorical and allowed to propagate goes for the heart of what it means to do good science. In terms of gender equity, Zingrone and Alvarado (2019) offer a brief overview but solid foundation upon which to build a more probing critique. As scientists, we must ask ourselves: if psi is that anomalous ‘what’ that seems to defy normal explanatory models, shows weak significance, or eludes attempts at replication, does that mean that psi doesn’t exist? Or perhaps the research methods that were co-opted from the colonizing heritage of the natural sciences that parapsychologists have been using have been the wrong ones all along.

The call to ‘decolonize parapsychology’ inaugurates the couple first steps toward a much longer journey. If we are to take seriously the fact that forms of racism, colonialism, sexism and other prejudices are alive and well in our disciplinary practices and circles, then it is incumbent upon us as ethical scholars to do the work to see the way our research adheres to, circulates, or, in the best case, rejects these kinds of ideologies.



Fig. 1 Strategies aimed at beginning the decolonization process.

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Coherent Matter Waves – Exploring Ball Lightning related to Cold Fusion, UFOs, Crop Circles, and Bigfoot

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Introduction: Research from John Hutchinson, Kenneth Shoulders, and more recently the Martin Fleischmann Memorial Project, building on the discoveries and ideas of inventor Nikola Tesla, have shown how large amounts of energy can be emitted from superconducting Exotic Vacuum Objects; tightly bound, coherent electron clusters whose behavior is described by fluid vortex dynamics. Such tightly compressed energy entities are regularly produced by Cold Fusion and LENR systems. These EVOs can create “strange radiation”, antigravity, and have been called *micro Ball Lightning* by scientists such as Takaaki Matsumoto and Russian researchers. This presentation suggests that electric anomalies like cars stalling and batteries draining as repeatedly experienced by witnesses around non-ordinary phenomena like UFOs, orbs, and related encounters are, in fact, related to this previously unrecognized type of coherent matter and its ability to tunnel through solid surfaces, transmute chemical elements, and create sudden, high-energy discharges when these energy wave clusters collapse.



Fig. 1 Example of inexplicable camera failure in British crop circle, 2009.

Cellular Cosmology and the Effects of the Human Hologenome on Consciousness

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Independent Researcher

Introduction: This presentation focuses on the scientific evidence concerning microbial evolution and the terra-forming of the planet, and how this force is driving the unfoldment of consciousness within Nature, and in turn, how this relates to the Human Experience. The position pushes against the standard anthropomorphic and Ego-centered position found in science, religions, and philosophy and reveals a more cohesive narrative that supports inclusion rather than separateness.

Essentially, microbes (bacteria, fungi, viruses) are responsible for terraforming the planet for their benefit. The soil, atmosphere, and water of our environment are created and maintained by them. We, as humans, are extensions of this activity and can be positioned as “microbial transport systems” since we are completely dependent on their actions both externally and internally and physically carry them throughout the various planetary and space environments. We cannot even perform basic physiology such as digestion without them-and actually live off the waste byproducts of their digestion. The cells within a body that are classified as human (blood, nerve, tissue, etc.) are also “independent” life forms since they are not solely dependent on the original body for existence or sustenance. Blood, tissues, and organs can be transferred from one person to another without loss of function or viability. These same cells can also be kept alive in-vitro, without a body or organic host required. This condition of recognizing the collective synergy of cells within a human form opens the door to challenging the standard model of what a human is.

Humans have 1000s of years of pondering the meaning of life and trying to understand the processes of Nature without incorporating microbes into the paradigms. We have only become “aware” of microbes for 200 years, yet they have been present nearly since the beginning of the planet. Science has only positioned the presence of microbes within humans as symbiotic recently in the 20th Century, overcoming the early trend of classifying all microbes as pathogenic.

With the advent of electron microscopy, we now realize that 90% of the cells (the building blocks of the human form) are microbial in nature and “not human”. This fact should make everyone reconsider what it means to be “human”. With the latest research of the field of Psychobiotics revealing that simply altering the microbiome within the human digestive tract through probiotics results in changing the thoughts and feelings of the individual, then the autonomy of Ego with regards to consciousness needs to be examined. There are numerous

reports of microbes directly affecting the functions and behaviors of animals, such as with *t.gondi* and mice. The presence of *t.gondi* in a mouse causes it to be attracted to cat urine and changes survival behavior so that it will be eaten by a cat. This purposeful alteration of the mouse benefits *t.gondi* since it requires the cat as a host to complete its life cycle. We fail to extend this potential to humans due to our conditioned hubris and anthropocentric defining of Nature, yet examples of these relationships are prevalent throughout nature with all complex organisms and microbes.

Recognizing the paradigm of cellular connections and relationships throughout Nature, it offers a potential explanation for the transmission of non-local information within parapsychology. We are just discovering the communication process and network of microorganisms called *Quorum Sensing*. It is possible through this communication system that information is relayed beyond the standard accepted norm. Instead of looking for a meta-physical answer to many manifestations of what are characterized as parapsychological expressions, possibly Quorum Sensing could account for some of the occurrences or exhibition of these experiences. Many of the parapsychology artifacts such as psychic intuition and past-life experiences could be a result of microbial information storage and transmission and fall under the domain of science rather than being labeled mystical or spiritual.

Validating the GCP Data Hypothesis and Harvesting Its Data

Ulf Holmberg

Independent Researcher

Introduction: I test for the validity of the hypothesis underlying the Global Consciousness Projects (GCP) i.e., the hypothesis that events which elicit widespread emotion or draw the simultaneous attention of large numbers of people, may affect the output of hardware generated random numbers. The hypothesis is tested by calculating daily aggregates out of the second-by-second data generated by the GCP and then correlating them with Google Trends search data. More specifically, changes in global attention are proxied with variations in the popularity of global internet searches, which is used to construct a monthly search word index. Since changes in the index thus represent changes in global attention in a particular topic, the validity of the GCP data hypothesis can be tested by correlating it with changes in data aggregates derived out of the GCP data. When doing so, I find that all tested GCP data aggregates significantly covary with the search index and that the most significant correlation is found on its monthly average ($P < 0.000$).

Methods: Since the validity of the hypothesis seems to hold true, I proceed with constructing a global attention and engagement index. This by applying the one-sided Hodrick–Prescott filter on both the daily and monthly averages out of the GCP data. The filtered series are then

normalized by defining a significant date as a date on which the attention index surpasses the 95th percentile of a standard normal distribution. When doing so, several significant world events are identified, and among them, the onset of the Covid-19 pandemic can be mentioned. As such, it can be suspected that the index can “pick up” globally engaging world events, results that possibly could be used by policy makers.

After-Death Communication with Cell Phones

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Introduction: After-death communication (ADC) with cell phones is a phenomenon in which instrumental transcommunication occurs on mobile devices. Our study has recruited a sample of 21 people who have experienced this phenomenon and asked them to answer a 95-item questionnaire regarding their experiences. What our research was trying to investigate is the nature of ADC using cell phones, the mechanisms through which the communication occurs, variations of the incidences, as well as how extensive the phenomenon is. The questionnaire detailed different aspects of the incidences to pin-point patterns, common reoccurrences, and to begin the exploration of these occurrences in hopes of understanding their nature and how they can possibly be replicated. On June 25th, 2020 our questionnaire, consisting of three measures, was posted onto the ITC group on Facebook. The 95-item survey was sent out specifically to this Facebook group, as its members identify as frequent practitioners of instrumental transcommunication using numerous devices, ultimately sharing their results and experiences with the rest of the group.

Methods

Participants: Participants consisted of 21 individuals recruited from posting our debrief form on the ITC Facebook group page on June 25th, 2020. There were 16 women and five men (N= 21), 16 of them were over 55 years old.

Materials: A consent letter was provided to the participants. It included a description of the study and detailed the potential risks and discomforts associated with it, the benefits, anonymity, and right to withdraw at any time.

Measures: Three measures were included in the study, which were six demographics question, an After-Death Communication Questionnaire developed by the researchers, and Carol Ryff's Scales of Psychological Well-Being. The After-Death Communication Questionnaire consisted of 41 Likert type items varying from “strongly disagree” to “strongly agree” regarding the nature of ADC via cellphone devices, along with the impact of these instances on the individual and

their perception of the sender and experience. Carol Ryff's Scales of Psychological Well-Being questionnaire was used as a measure of psychological well-being of the participants, looking into six different areas of well-being measured by the Ryff inventory, which are Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance. Each one of these items was scored on a six-point Likert scale, ranging from "strongly disagree" to "strongly agree" (Ryff & Keyes, 1995).

Results: Findings show our participants scored higher on the Personal Growth scale of the Ryff inventory than the norm ($df = 8504$, $t = 2.969$, $p = 0.0015$). This finding is statistically significant and suggests that our participants have a greater interest in self-development and openness to new experiences. As well, different mechanisms of after-death communication were reported by our participants through self-assessment measures. The most frequent of these mechanisms were telephone calls, photos or videos showing up on cell phones, text messages, non-vocal sounds during telephone calls or on voicemail, and voice during telephone calls. Our study also includes participants' descriptions of their experiences, which will be shown in the presentation.

Discussion: The findings of our study highlight the different types of mechanisms through which after-death communication can occur on cell phones. This changes the perception of after-death communication and suggests that communication can occur with regular cellphones without the need for creating dedicated EVP and ITC devices.

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Recent Remote Viewing Applications Survey

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Introduction: The primary purpose of this review and exploratory survey of experienced remote viewers was to discover which types of projects they are engaged with today, and to what extent, and to understand their backgrounds, methods, approaches, practices, philosophies, beliefs, and phenomenological experiences related to this work. Another goal was to discover whether the original definitions and tenants of remote viewing defined within its specific historical context have changed.

Methods: In designing our novel survey, we examined RV projects discussed in the scientific, archival, and popular literature spanning the past 50 years since remote viewing inception. These past projects, along with their methods, approaches, and philosophical underpinnings, informed our multiple-choice question construction (46 in all) as we operated from the hypothesis that we would likely see, at least to some extent, a continuation of these themes, or reminiscences of them, through present day remote viewing applied work. Still, we anticipated there could be some changes related to the decentralization-deinstitutionalization of remote viewing from its shift to governmental and military culture into a far less structured one. We also anticipated there could be changes related to developing technologies.

Only respondents who have participated in real-life applied/operational remote viewing projects other than for training practice or research purposes were invited and allowed to participate. We were interested in polling only those who would fall under the stricter definition of remote viewing, and not just any type of psychic practitioner such as an intuitive or clairvoyant reader or medium.

Results: One hundred-six remote viewers participated in the survey, although not all responded to every question. We consistently had between 70 and 73 responses per question. Participants came from over a dozen countries, spanned in age between 35-55, with twenty participants over the age of 65 (19.61%). Professions included tax analyst, financial auditor, investors, insurance claims adjuster, economic development consultant, systems analyst, business school professor, software developer, software engineer, geophysicist, medical surgeon, registered nurse, pharmacist, nutritionist, law enforcement officers, teachers, and artists.

Responses were analyzed through the use of a mixed-methods approach. The main findings are that remote viewing applications are wide, spanning from business to scientific and intelligence applications, and for the use of personal, corporate, and public agencies. RV is often used for finding missing items and pets. Twenty-three percent of the participants declared that their remote viewing job was paid. The range of the training and experience with remote viewing was expansive, and the majority used mixed methods, depending on the project. We found that most respondents expressed both awareness of and respect for the scientific principles related to blinding and separation of roles, yet there was a range of views regarding the practicality of adhering to these for application purposes.

Discussion: While only 23.4% declared that their RV job was paid, for some, this is a real professional job. All viewers had some level of training, ranging from less than one year to more than 20 years of training and less to 50 to over 2000 RV completed sessions. They are also trained in a wide range of modalities. Differences between remote viewers today and those who emerged from the earlier research labs and government RV programs are that viewers today are without monitors in terms of the actual conducting of the RV sessions. While some stick to a single modality (such as controlled remote viewing), many reported adjusting their

approaches based on a project's needs and using a mixed-methods approach. In terms of the overall project setup, many continue to work in groups, or at least with taskers. Respect for blinding protocols was mentioned, but there was a range of beliefs about the practicality of remaining blind for applied projects. Working with front-loading appeared to be viewed as a higher-level skill.

We were impressed by the expressions of strong enthusiasm, excitement, and personal benefits of remote viewing during applications work. The phrase "remote viewing makes me high" was repeated several times, as were words such as "thrilling" and "love" and "fascinating." Our participants gave different definitions of success, not just accuracy-driven. Our final conclusion is that remote viewing continues to be carried out in the spirit in which it was intended, for practical use and as an information gathering tool, by articulate, thoughtful, and engaged participants.

This project was sponsored by IRVA, the International Remote Viewing Association, and the IRVA Research Unit (IRU).

Why We Need the Apocalypse Now! A Materialist Investigates Reality and Changes his Mind

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Introduction: This presentation will recount some of my anomalous experiences of synchronicity and psychokinesis (Dunningham, 2013). As the theme of this conference is connections, I will present this material through a series of connections and parallel frustrations that highlight my personal journey from occult (hidden) agnosticism, dominated by paranoia, to apocalyptic (unveiled) epiphany, characterized by signs and synchronicities. Connected with this, I will conclude with a discussion of how spirituality could progress from a situation of individual occultism and isolated meaningful coincidences towards an awareness of global synchronicity within a connected, enchanted world.

Experiences: Connected frustrations that I wish to raise:

1. I started experiencing feelings of paranoia when working in the oil industry in Cairo in 2005. I particularly noticed correspondences between what I wrote in private emails and mentioned in telephone calls and what unconnected people would say when they later engaged me in conversation.

2. As time progressed, I started noticing more coincidences, but due to my non-spiritual, materialist background, I had no logical way of accounting for these events other than by arriving at the conclusion that I was at the focus of a human conspiracy.
3. During episodes of emotion, I experienced instances of apparent psychokinesis.
4. I became aware of a spiritual presence that continues to manifest itself through muscular 'pulses' (fasciculations) at times of meaning (for instance, if I hear a nearby sound or I am reading a significant sentence in a book).
5. In the UK, members of the psychiatric community determined that I should begin taking anti-psychotic medication, which I refused as all the 'meaningful' coincidences were taking place in the 'external world' as I saw it. I did not believe that taking medication would alter my view of what I was witnessing.
6. Through my own reading, I eventually became aware of Carl Jung and Synchronicity (e.g., Jung, 1960), but I was not introduced to this material through the orthodox medical community.

My frustrations are manifold, and they are the reason I believe it is now time to move away from the concept of the occult (hidden) and instead precipitate the apocalypse (unveiling)! I personally would have preferred not to have been left to 'flail around' for fifteen years to come to terms with changes in my personal worldview. People often say to me – "ah, but you're on a spiritual journey!" That may be so, but there is no reason why that journey should have to be so convoluted and taxing.

Discussion: Some propositions:

1. **Western psychiatrists should have the ability to practice psychotherapy and stop automatically prescribing psychotic medication (e.g., Davies, 2013).** If one person I had spoken to in those early days had said – "have you heard of Synchronicity" – it would have helped me to understand what I was experiencing. No-one did this.
2. **Spiritualists should dump the concept of the 'occult'.** The fact it is 'hidden' means that people on spiritual journeys are constantly repeating the same mistakes, with little support or interaction while they do so. Moving away from the occult means being clearer and more open regarding what we talk about when we discuss spiritual science. Personally, I am aware that I am connected to a larger spiritual presence, which has intelligence. Calling this presence 'God' might be loaded with history, but at least people from all backgrounds understand the meaning of the term in the general sense.
3. **Instigate a global synchronicity 'big science' project where people can express their personal numinous connections with events of global significance to help reenchant the world.** Many of us will have seen synchronicity in our personal lives (e.g., Schwartz, 2017), but I believe it might be fruitful to expand the breadth of our synchronistic awareness. I regularly feel a numinous connection between my life and global news events, which can at times be particularly strong and impactful. I am sure that I am not

the only one to experience this, and we could probably expand the concept to include 'significant' events that have historically been called 'signs' in the traditional religions. If several people begin to feel a strong connection with these events or signs, we should be able to raise general awareness of the numinosity of these occurrences on a global level. It would be a case of bringing enchantment back into a world in which ultimately all events can be viewed as being orchestrated by God. Note that this proposition is like the concept of an evidence-based faith, as put forward by other workers in this field (e.g., Schwartz & Simon, 2006).

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Paranormal Experiences Relating Geomagnetism and Urban Electromagnetic Noise Level

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Introduction: Many studies on paranormal experiences suggest that human beings have a common ability to experience paranormal experiences and that those experiences are based on different biological mechanisms. It is necessary to clarify which kinds of experiences are more susceptible to which environmental factors. For example, since the beginning of the 21st century, new discoveries have been made about the relationship between organisms and geomagnetism, such as that the magnetic vision of European robins is disturbed by electromagnetic noise emitted by home appliances in urban environments, and that humans also have magnetite-type magnetic sensors. Geomagnetism should be considered as one of the environmental factors related to paranormal experiences.

In the 1980-1990s in Japan, frequency of paranormal experiences was surveyed for students to collaborate McClenon's survey (1993) for students in the USA and China. The present authors

made similar surveys against Japanese and Slovak university students in the 2010s, and compared their data with the previous data. They tried to explain the difference in frequency of experiences by geomagnetism and urban electromagnetic noise level. Moreover, using the same way, they re-analyzed data of the European Human Value Study shown in Haraldsson and Houtkooper (1991).

Methods: The questionnaire sheet had 2-point scale items for déjà vu, sleep paralysis, presentiment, telepathy, clairvoyance, OBE, 6th-sense belief, and signs of ghosts. Surveys were conducted during 2013-2019 for 1527 Japanese students of 3 universities and conducted in 2019 for 443 Slovak students of the University of Žilina. Comparison data were obtained from Hagio (1990), Becker (1990), and McClenon (1993). To allow comparison, clairvoyance, presentiment, and telepathy in the authors' survey were compiled into the ESP category.

By groups, the total magnetic force F of geomagnetism at the targeted place was calculated by a model magnetic field calculation using IGRF-13. Additionally, the authors assumed that the electromagnetic noise level in the urban environment could be expressed by the power supply voltage of a common household.

Results: [Students] ESP experience rate of Slovak students was 81.9% which was larger than the rate obtained in the other countries.

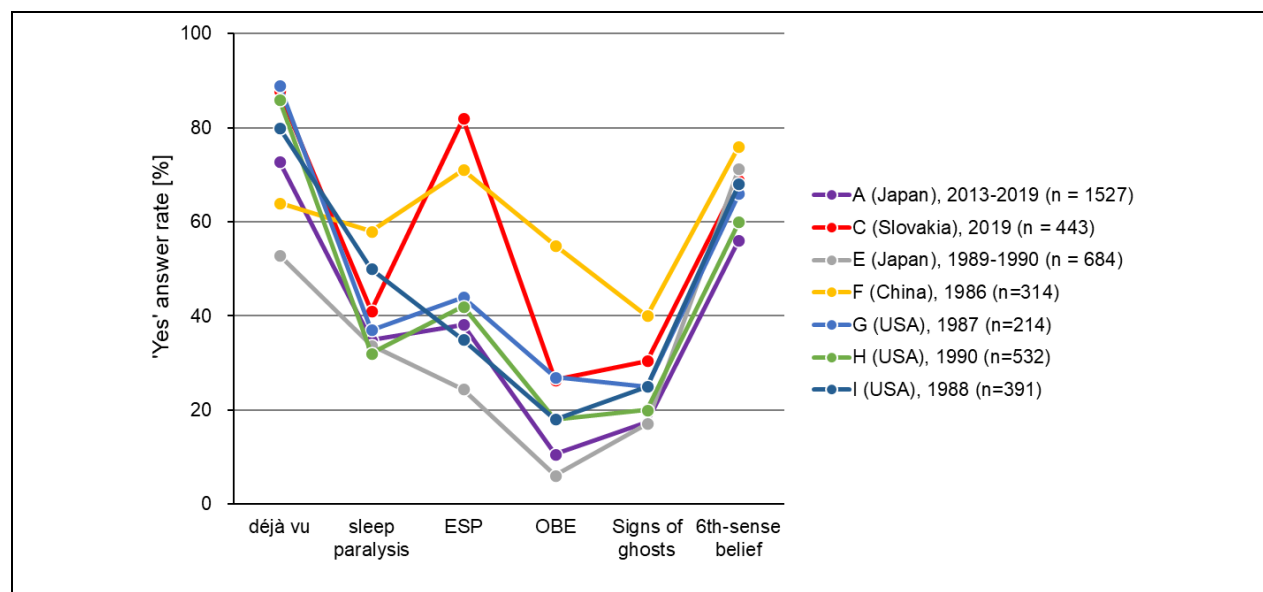


Fig. 1 'Yes' answer rate for students to have experienced the six categories.

There was no significant correlation between F and paranormal experiences and also between latitude north and paranormal experiences. However, there were positive significant correlations between ESP and the power supply voltage ($r = 0.97$, $p = 0.0004$, two-tails, $n = 7$), and between the signs of ghosts and the power supply voltage ($r = 0.88$, $p = 0.009$, two-tails, $n = 7$).

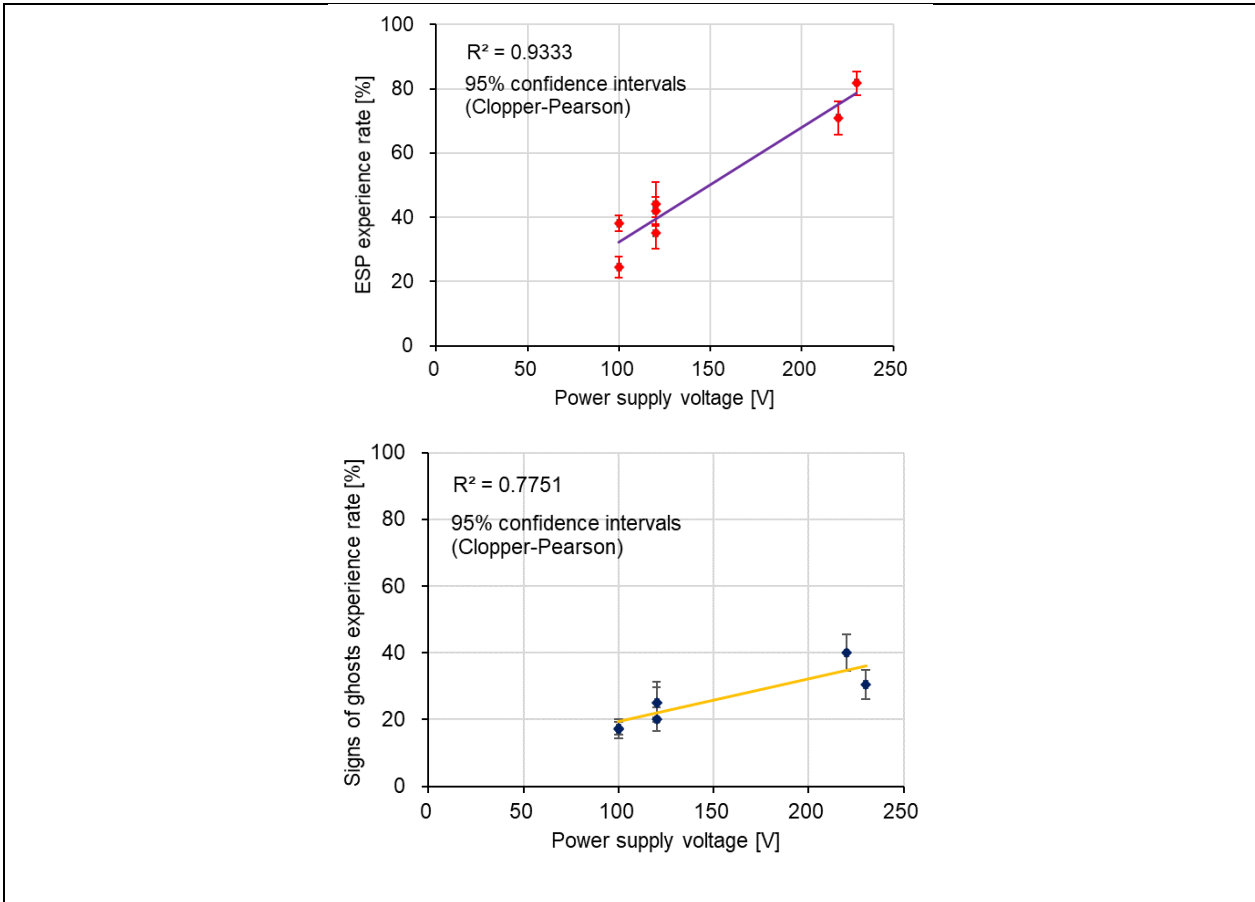


Fig. 2 Correlation of ESP or signs of ghosts with power supply voltage for students in Japan, USA, China, and Slovakia.

[European Human Value Survey (Adults)] The correlation between clairvoyance and latitude north was $r = -0.74$ ($p = 0.002$, two-tails, $n = 15$) (Fig. 3). The correlation between clairvoyance and F was not significant ($r = -0.22$, $p = 0.434$, two-tails, $n = 15$). While the correlation coefficients of telepathy and the contact with the dead were $-0.33 \leq r \leq 0.12$ (not significant) against both F or latitude north.

In relationship to the power supply voltage, telepathy was moderately negatively correlated at $r = -0.55$ ($p = 0.041$, two-tails, $n = 15$), while both clairvoyance and the contact with the dead were not correlated at $r = -0.31$ ($p = 0.28$, two-tails, $n = 15$).

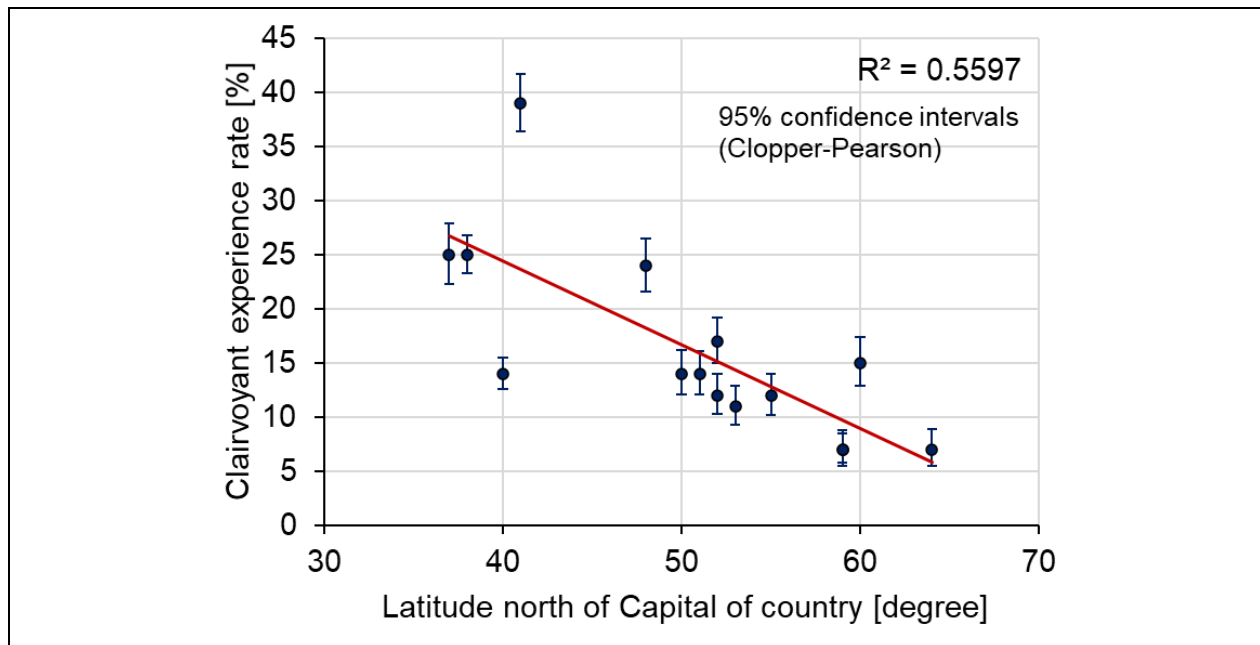


Fig. 3 Relationship between latitude north and clairvoyance in the European Human Values Survey (adults).

Discussion and Conclusion: The possibility was suggested that the power supply voltage was a strong environmental factor causing the ESP experience, especially presentiment. Re-analyzing data of the European Human Values Survey (1981-1984), the authors found that latitude (a parameter of geomagnetism) had an effect on clairvoyance. It was considered that the responsiveness to electromagnetic phenomena differed depending on the type of paranormal experiences.

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Knowledge from the Future or Footprints from the Past?

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Introduction: The information available to our senses is incomplete, noisy, and to varying degrees ambiguous. Current theories about visual perception assume that our perceptual system tracks this problem by weighting the a priori restricted sensory information with previous memorized perceptual experiences in order to construct stable and reliable percepts. These theories are supported by numerous experimental evidence (e.g., Friston, 2012; van Rooij et al., 2016; Brascamp et al., 2018; Liaci et al., 2018).

Theories about precognition have an opposite point of view. They assume that information from the future can have influence on perception, thoughts, and behavior. Some authors even postulate evolutionary advantages by such precognitive abilities. Several experimental studies provide evidence for precognition effects. Other studies found no such effects and/or failed to replicate the previous findings (e.g., Rhine, 1954; Honorton & Ferrari, 1989; Schmied-Knittel & Schetsche, 2012; Mossbridge & Radin, 2018). One problem of the vast majority of precognition studies may be that the experimental paradigms did not systematically control for potential effects from the perceptual history.

The Necker cube is a two-dimensional projection of a three-dimensional lattice cube stimulus (Necker, 1832). During prolonged observation of the Necker cube, our perception alternates repeatedly between two alternative 3D interpretations, even though the stimulus as such stays unchanged. Ambiguous figures, like the Necker cube evoke unstable / acategorical perceptual and mental states (e.g., Atmanspacher & Fach, 2019). Precognition effects in turn are postulated to be more probable in such unstable / acategorical mental states. Ambiguous figures may thus particularly serve as experimental tools to study precognition effects (Rabeyron & Watt, 2010; Bierman, 2011; Stanford, 2015; Mossbridge & Radin, 2018).

Methods: We presented ambiguous Necker cube stimuli and disambiguated cube variants in alternation and systematically tested in two separate experiments whether the perception of a

currently observed ambiguous Necker cube stimulus can be influenced by a disambiguated cube variant, presented in the immediate perceptual past (perceptual history effects) and/or in the immediate perceptual future (precognition effects).

Results: We found strong perceptual history effects, which depended on the length of the perceptual history trace but were independent of the perceptual future. We also found some weak but non-significant indications of precognition-like effects, which however depended on the perceptual history.

Discussion: The perceptual history effects found in the present study are in confirmation with related studies from the literature. The precognition-like patterns are interesting but weak and only present in the first of the two experiments. Overall, the present study demonstrates that any future experiment about sensory or extrasensory perception urgently needs to control for potential perceptual history effects.

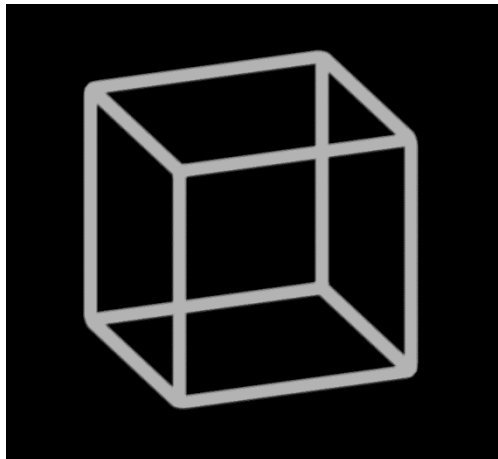


Fig. 1 A white-on-black variant of the famous Necker cube (Necker 1836), created by J. Kornmeier.

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“Multi-event Sensor App (MESA 3.0)” – A Citizen Science Tool for Big-Data on Ghostly Episodes

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Introduction: Instrumentation has been used inconsistently in studies of “ghostly episodes” (Houran & Lange, 1998; Dagnall et al., 2020). Moreover, big data analytics are likely needed to describe the important interactions among attitudinal, normative, and environmental variables that likely mediate percipients’ reports. The growth of social, mobile, cloud and multi-media computing can now support robust “citizen science” campaigns. Accordingly, we developed MESA 3.0 — an android application that conducts site-specific mapping. This “app” is the next-

gen version of early MESA systems (Harte et al., 1999; Houran et al., 1998) and was designed to document and quantify anomalous experiences in real-time for cross-correlation with time-synced environmental readings.

Method: MESA 3.0 uses the sensors in mobile devices to measure GMF 3-axis, Lighting Levels, Temperature, Barometric Pressure, and Gravity/Acceleration. Data are collected at five samples per second, creating mini-packets of 25 readings every five seconds. Environmental data, audio, and pictures are aggregated, logged, and displayed to users via descriptive statistics and automatically saved in shareable files, which allow for uploading with a corresponding cloud-based data repository. The app further documents the installed sensor type, sensitivity, and resolution. Inclusion of the new *Survey of Strange Events* (SSE: Houran et al., 2019) also facilitates standardized comparisons of percipients' reports across environmental settings. We field-tested MESA 3.0's four functional modes (i.e., Baseline, Freestyle, Sentinel, and EVP-Knock) via an exercise with volunteers who collected (a) baseline readings of their residences, (b) a baseline of a public area, and (c) baseline readings at a reputed "haunt."

Results: The app performed as designed — environmental data were easily retrieved, compared against photographs and SSE scores, as well as automatically stored and available to download for statistical analysis. We noted some variability across different mobile devices, but overall, the environmental readings and investigation protocol were stable across users and hardware. Thus, the app was an effective method to obtain "environmental and experiential maps" of settings associated with anomalous experiences.

Discussion: MESA 3.0 is a user-friendly mobile lab that can be used in research designs involving citizen scientists. I.S.R.A.E will host and maintain the application's platform and open-access data repository. Our intention is to engage several thousand enthusiasts to create the largest documented set of public data for "haunted, sacred or enchanted" locations to date. As such, we hope this effort can help to mend antagonistic relationships between parapsychologists and ghost-hunters (Hill et al., 2018, 2019; Houran, 2017) by introducing this tool to amateur paranormal groups for structured and productive future collaborations between the two camps. Collaboration for further application and refinement of MESA 3.0 is open and welcome.



Fig. 1 Screen shot of MESA 3.0's output of environmental readings.

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Measuring Group Connections: Heart Rate Variability (HRV) and Random Number Generators (RNG)

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Introduction: Most people have experienced the power of group energies, whether at a political rally, a sporting event, a musical concert, or a meditation retreat. While concrete factors like the volume of the cheers and the sight of other people clapping are easy to identify as contributors to the impact of these events, objective measurement of the intangible aspects of this phenomenon has been problematic. In this report, I describe the detection and measurement of the subtle energy aspects of group connections using two well-validated techniques: heart rate variability (HRV) (in particular, Heart Coherence (HC)) and random number generators (RNG). The first demonstration was done in a laboratory setting, and the second was done while attending a professional baseball game. Both produced significant confirmatory evidence that intangible group connections are, in fact, real, measurable, and quantifiable.

Methods: HRV: On-site at the Institute of HeartMath, a volunteer (the author) who was naïve to the IHM practice of heart coherence (HC) had all incoming visual and auditory cues blocked by blindfolds and headphones. He then had his baseline HRV status was measured with standard heart-rate biofeedback monitors, before being joined by four experienced HeartMath practitioners (Figure 1). At a moment in time unbeknownst to the subject, they began their meditation practice, while he continued to be monitored to determine whether his HC status was being affected by the nearby group’s meditative activities.

RNG: A software program for continuously generating random numbers was installed on a laptop computer that the author brought to a professional baseball game. The program was

allowed to run throughout the game, which the author watched while seated several hundred feet away from the computer. He made note of moments that he subjectively determined were emotionally significant or intense. After the game ended, the RNG data file was analyzed by an off-site statistician, who was blind to the proceedings, in order to determine at what moments in time the RNG output varied from randomness by more than two standard deviations (i.e., attained statistical significance).

Results: HRV: During the baseline phase, the subject showed no significant degree of heart coherence, ranging from 0-5% on the coherence ratio weighted average HC index. Shortly after the HeartMath team entered the room, and within seconds of them beginning to meditate, the subject's HC tracing showed an immediate and sustained increase in coherence to 25% over the next minute. At that point, the study was terminated by the lab director.

RNG: Seven moments of statistically significant spikes in RNG non-randomness were noted, and five of them corresponded exactly in time to the five of the eight most emotionally significant moments of the game, as previously determined subjectively by the author (Figure 2). The odds that these co-occurrences happened due to chance alone were 1:2,000 ($p < 0.0005$).

Discussion: Both studies validated the initial hypothesis that group energetic connections could be measured by fairly simple instrumentation. The mechanism of action for these effects is not clear, though the apparent synchronization of heart rhythms is thought by IHM researchers to represent a resonance phenomenon between the cardiac magnetic fields of the participants. Future studies could shield out various components of the EMF and biofield via Faraday cages and mu-metal shielding to isolate any putative non-EMF or etheric components of this interaction.

The baseball study mirrored findings by the PEAR Lab and the Global Consciousness Project, but with more precise moment-to-moment data analysis made possible via the novel proprietary software used in this study. In contrast to the cumulative data analysis favored by those labs, the use of this novel software could enable more precise studies of the impact of group consciousness on RNG devices.



Fig. 1 Group heart resonance demonstration.

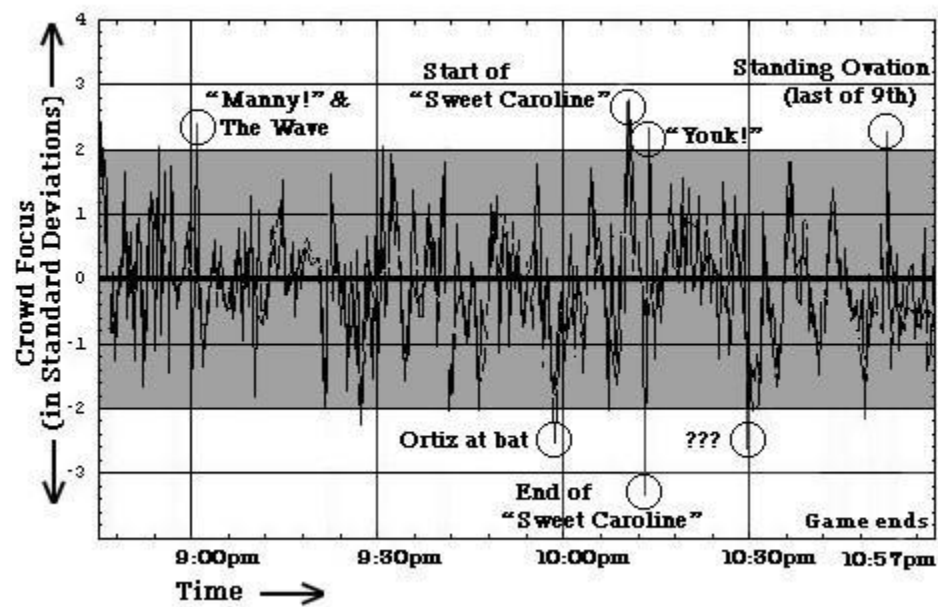


Fig. 2 Results of RNG measurements during Red Sox baseball game.

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Help-Seeking Patterns and Social Support Among Individuals Reporting Anomalous Experiences

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Introduction: Many studies suggest that the psychosocial support offered by family and religious groups is fundamental in coping with negative anomalous experiences (AEs) (e.g., Martinez-Taboas, 1999; Maraldi, 2014; Roxburgh & Roe, 2014; Delmonte et al., 2016). The investigation of help-seeking patterns and sources of social support may provide relevant information for differentiating between pathological and non-pathological AEs. There are many types of support (for example, from family, peers, psychologist/psychiatry, members of the religious group), but there is little specification in the existing literature of how different social contexts and sources of social support may impact these experiences. A systematic assessment of the experiencer's life history is also recommended since the positive or negative impact of AEs may vary according to life stage (e.g., Maraldi, 2014; Delmonte et al., 2016). With these aspects in mind, this study investigated the help-seeking patterns and sources of social support reported by members of mediumistic religions in Brazil (including Umbanda, Spiritism, and Valley of the Dawn), as well as the emotions associated with their first AEs and the context and

period in which these experiences initially emerged (i.e., whether before or after attending a mediumistic religion and at which moment in their lives).

Methods: From initial ethnographic observations in different mediumistic religions (described in a previous study by Maraldi et al., 2020), we obtained the contact information of potential respondents to whom we submitted an online survey developed for this study. The invitation to participate was sent either directly to the members of these groups or through their religious leaders, who helped to disseminate the survey. The survey assessed several aspects of mediumship (such as when mediumistic experiences began in their lives and whether this was before or after the respondents began attending a religious group), the support received from different social groups to practice mediumship, the emotions associated with their first AEs, and patterns of help-seeking in difficult moments. The sample comprised 263 mediums, mainly from the city of São Paulo. 66.5% were female (Mean age = 41.95 + 12.07, minimum = 16, maximum = 73).

Results: We found that anomalous/mediumistic experiences were more often associated with positive emotions (for example, tranquility/peace). Still, the most reported emotion was fear (43.3%). 64% of the sample used positive words to describe their first AEs (such as enthusiasm and inspiration), with an average of 2.8 positive words chosen by respondents, while 59.3% used negative words (such as sadness or confusion), with an average of 1.7 negative words. When mediumistic experiences began in adulthood and already within a religious context, participants reported having experienced fewer negative emotions in relation to their AEs, compared to the occasions when these experiences began in childhood and adolescence and outside a religious context. Participants also reported that with time and religious practice, the frequency of AEs occurring during religious services augmented in comparison to those occurring outside the religious context. With regard to the social support and encouragement received from other people to practice or experience mediumship, the attitude of the father, brothers, and friends was described as predominantly indifferent. The support of the mother, spouse /partner, and members of the respondents' religion was often described as positive. When asked about the sources of help sought to deal with different personal and interpersonal problems, the spiritual/religious help was mentioned more frequently in comparison to other options (medical, psychological, friends, family). 51.3% reported having received psychological treatment at some point in their lives, and 22% psychiatric treatment.

Discussion: Our findings indicate that AEs are not always related to negative emotions but that this can vary according to the moment they emerged in the individual's life and the degree of social support received, especially from members of a religious group. Psychological interventions directed at helping individuals cope with negative aspects of AEs should consider the social context of the experiences and the experiencer's life history. Our study also had limitations. Our sample was biased toward highly educated Brazilians, most of them women and with significant levels of religious involvement and many years of mediumship practice. A

sample with lower religious involvement and a different demographic profile could evidence different results. Despite these limitations, the present study was the first one to evaluate the help-seeking patterns and sources of social support of individuals experiencing AEs in Brazil, as well as the emotions associated with such experiences.

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Material Analyses of the “Faces of Bélmez”

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Introduction: 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 a house’s kitchen, which were interpreted as images of faces of paranormal origin. The events allegedly were strongly connected to the physical presence of the then 52-year-old María Gómez Cámara. One characteristic was the dynamic of the formations: they manifested themselves at different speeds, on some occasions directly under the eyes of witnesses, and sometimes disappeared again, or changed their appearance. From the beginning, however, there was suspicion that the faces could have been created by fraud. First investigations were conducted by the police—María mentioned the “scientific police from Madrid” that visited the house for eight days with

their technical devices, examined the faces, and removed samples of concrete for analysis. In the following years, further material analyses were carried out, which played a central role in the assessment of the nature of the phenomena, whether they were real paranormal phenomena or caused by fraud. Outside of Spain, the spectacular case was rather forgotten, probably partly because of misrepresentations, but the interest of the Spaniards themselves remained lively. Still in 2014, a materials analysis was carried out on behalf of a television station.

With this paper, an overview of the materials analyses carried out with the faces will be given. For this purpose, partially unpublished investigation reports and other archival documents were used in addition to the facts mentioned in published texts. Unfortunately, there is no report from the materials analysis from the first investigation available. Thus, we can only refer to four analyses: one carried out by J.J. Alonso in the year 1975; two others by the Grupo Hepta in 1991 and 1994; and a final analysis by two scientists, José J. Gracenea and Luis Alamancos, on behalf of the television station *Cuarto Milenio* in 2014. The purpose of all these investigations was to clarify the question whether the faces were produced by human hands or occurred in an inexplicable (paranormal) way. The following two conventional explanatory hypotheses were at stake: (1) light-sensitive silver salts or other chemicals were applied, which led to the corresponding discoloration of the cement floor, or (2) the faces were produced by applying paint.

In summary, despite the sometimes somewhat meager details of the accessible reports, the picture is quite uniform. The two mentioned conventional explanations for the formation of the pictures, namely the application of a solution of silver salts to the cement floor, which then causes corresponding blackening of the surface, as when developing a photo print under the influence of UV light or the application of paint and general external manipulations of the floor surface, are not supported by the analyses. Of course, the fact that the last analyses of 2014 as well as those of Grupo Hepta in the 1990's were commissioned by supporters of the paranormal hypothesis must be viewed critically. However, the materials analyses coincide in the decisive findings with those from Alonso's early analysis. Although Alonso's client could not be identified, his report shows that he remained skeptical about the paranormal hypothesis, as he offered a conventional, albeit extremely implausible, explanation for the origin of the face he examined.

Together with all the interview data containing statements from directly and indirectly involved persons, a plausible conventional explanation for the emergence of these faces during the first phase of the appearance in the early 1970s is still missing. It is as if the dark (melanocratic) particles in the cement had arranged themselves in a hitherto inexplicable way to the facial forms. Since relatively large amounts of moisture were detected, especially in connection with the early sealing and covering experiments of Bender and Argumosa, this could play a

significant role in formation of the faces, in connection with the hygroscopic properties of the soil material. However, the anomalistic aspect remains unaffected by such speculation.

Ritual Healing Theory: Qualitative Evaluation of a Group PK Experiment

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Independent Researcher

Introduction: The ritual healing theory provides an evolutionary scenario pertaining to anomalous experience, shamanism, and consciousness (McClenon, 2002, 2018). Hypotheses derived from this theory are evaluated through a group psychokinesis (PK) experiment.

Ritual Healing Theory: Ancient aquatic worms (sleeping), reptiles (dreaming), and mammals (dissociative animal hypnosis) show evolutionary progression regarding consciousness. The ritual healing theory hypothesizes that pre-linguistic hominids, around fires perhaps a million years ago, engaged in dissociative proto-rituals involving repetitive voice modulation, a stress-reduction strategy. This led to communal chanting, singing, dancing, advanced dissociative states, symbolization, and eventually language. Selective mating, based on singing, dancing, and language, probably expedited this process. Dissociative processes facilitated anomalous experiences (ESP, PK, OBE), resulting in shamanism. Shamanic healing, effective due to hypnotic/placebo effects, further shaped religion's genetic basis.

Hypotheses: The ritual healing theory argues that anomalous experiences (apparitions, waking and dreaming ESP, out-of-body and near-death experiences, PK, synchronicity, spiritual healing, and miscellaneous anomalous experiences) are correlated with dissociation and other shamanic variables (dissociation-anomalous experience hypothesis). These experiences generated beliefs regarding spirits, souls, life after death, and magical abilities, the ideological foundations for shamanism. Shamanism was launched by Paleolithic OBE, ESP, and group PK (experiential source hypothesis). Shamanic healing offered humans survival advantages due to hypnotic and placebo effects (shamanic effectiveness hypothesis). As a result, shamanic healing selected for dissociative/absorptive alleles, further shaping the genetic capacity for religiosity (genetic basis hypothesis).

Psychical research theories pertain to this process. Batcheldor (1984) argued that fear of psi, witness inhibition, and ownership resistance thwart group PK. He hypothesized that artifacts (normal perceptions that seem paranormal) induce belief in PK, facilitating authentic paranormal events. Lucadou (2015) argued that quantum observation governs psi, often thwarting it. The ritual healing theory builds on these ideas, using Hobson's model of consciousness. Anomalous experiences involve special combinations of waking and dreaming

chemical systems. They deviate from typical sleep-wake cycles, modifying waking “reality production” (figures 1, 2). As a result, psi has dream-like, transitory, creative, trickster qualities (trickster hypothesis).

Experiment: This report describes an ongoing field experiment, designed to shed light on Paleolithic shamanism (McClenon, 2002, 2018). The experiment was not designed to prove that specific experiences are paranormal but to observe artifact-belief-experience relationships. A weekly online Zoom group, the reconstituted Society for Research on Rapport and Telekinesis (SORRAT), began meeting in August 2019, with the goal of eliciting group PK. Most participants had extensive histories of paranormal experience.

Results: Participants experienced increased levels of anomalous experience outside the sessions and heard unexplained sounds during sessions (similar to electronic voice phenomena). One participant’s mother died, launching a series of life-after-death PK and synchronistic experiences (experiential source hypothesis). In June 2020, the group experimented with three pinwheels, under a mobile (sensitive to air currents). The pinwheels were monitored during sessions by a cell phone camera in a closed room. The group observed the pinwheels turning while the mobile remained stationary. The pinwheels, and mobile, did not turn when the group was not meeting. During later sessions, the center pinwheel turned while the other two pinwheels, and mobile, remained stationary. The group found that the pinwheel would not turn when covered by a glass jar (trickster hypothesis). Attempts to determine the “entity” causing turning were not conclusive. Pinwheels seemed to respond to participants’ verbalizations and emotions. Participants regarded “spirits” or “group consciousness” as logical explanations (experiential source hypothesis). Edited videos of pinwheel movements are included in this presentation. Video documentation seemed to inhibit the phenomena (trickster hypothesis). Attempts at spiritual healing were considered beneficial (shamanic effectiveness hypothesis).

Conclusion: Study findings supported the experiential source hypothesis, trickster hypothesis, and shamanic healing hypotheses.

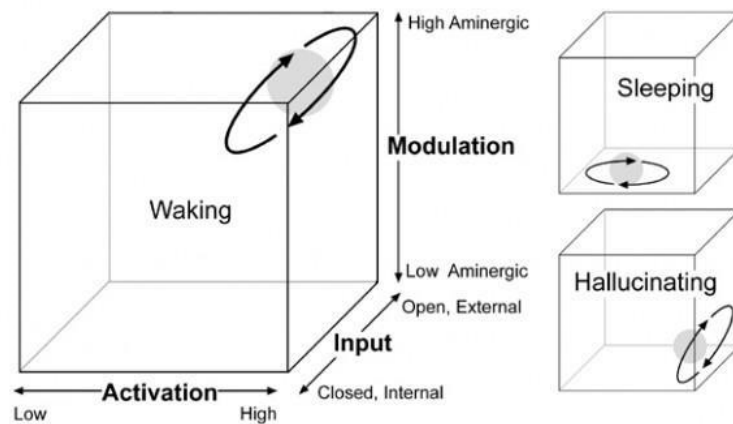


Fig. 1 Hobson's (1994) model of consciousness.

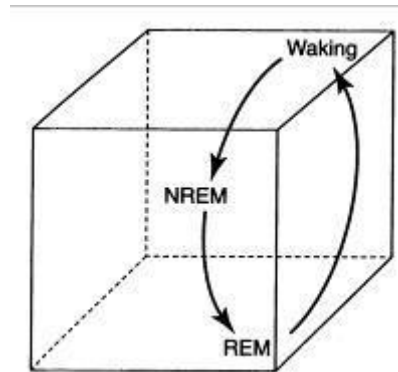


Fig. 2 Hobson's (1994) model of the rapid-eye-movement (REM) cycle.

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Unlocking Zero-Point Energy

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Introduction: In a recent breakthrough (Moddel et al., 2021a), we reported the successful demonstration of extraction of power from zero-point fluctuations. Since the advent of quantum mechanics, zero-point energy (ZPE) has tantalized the scientific community with its huge store of energy, which has appeared to be a fixture of nature but not something that could be extracted. Here, I describe why this energy has appeared to be inaccessible and then provide the keys to unlocking it.

Background: In 1911, Planck presented his second theory for the spectrum of electromagnetic radiation resulting from material at a particular temperature to account for observed spectra. It included two terms, a temperature dependent term, and a second, temperature independent term that became known as the quantum vacuum or ZPE radiation. Decades later, with the development of quantum theory, this ZPE was again proposed, but this time as a result of the quantum uncertainty principle, an explanation that can be easily understood. Today most of the physics community invokes the uncertainty principle as the justification for ZPE. Perhaps because it is seen as existing to satisfy a physical principle instead of, say, the result of a physical interaction, it is viewed as a fixture of nature. Such a fixture is unalterable and therefore not available for extraction. Beyond this mindset, I give three physical reasons ZPE should not be available for extraction.

Arguments against the possibility of zero-point energy extraction:

1. Need for a difference to induce flow. Just as heat flow requires a temperature difference to drive it, so too would ZPE require a difference to drive it. Since ZPE is the universal ground state, it would appear impossible to provide a difference in its level.
2. Equilibrium and detailed balance. In equilibrium all transitions between two sites or energy levels are balanced by the opposite transitions, a process called detailed balance. Since ZPE is considered to be in equilibrium, even if we could induce a flow, it would be balanced by an equal flow in the opposite direction, as part of the detailed balance concept.
3. Perhaps most fundamentally, energy extraction from a system in equilibrium would violate the Second Law of Thermodynamics, arguably the most sacrosanct principle in physics.

How to break through the arguments against the possibility of extraction: I pondered the arguments against extraction for years, and developed a device concept to circumvent them called a Casimir photoinjector.

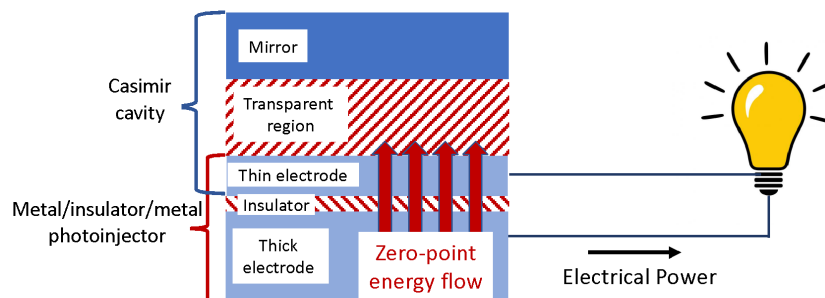


Fig. 1 A Casimir photoinjector.

We have designed, fabricated, and tested over a thousand of these devices, and found real energy extraction. After carrying out eight different types of verifications of the measured response, we found no artifacts that can explain away the results (Model et al., 2021a). We measured even larger effects on the resistance of the samples (Model et al., 2021b). It is still possible that another, non-ZPE cause for the observations will be found, but in the absence of that the following appear to be the keys to unlocking ZPE:

1. A Casimir cavity is an optical cavity in which the density of vacuum ZPE modes is reduced compared to outside of the cavity. The commonly associated energy is due to the Casimir force, an attraction that appears between the mirrors of the cavity. We instead use this cavity to induce an asymmetry that produces a net flow of electrons through the Casimir photoinjector.
2. It has been argued that a small amount of energy may be borrowed from the background ZPE for a very short time (Ford, 1991). We break the detailed balance by capturing the electrons in femtoseconds (10^{-15} seconds), before the borrowed energy can return to its source. This is accomplished with extremely fast transit of electrons through nanometer layers in the Casimir photoinjector, and essentially bilks the system out of some of its ZPE.
3. More than any other factor, the possible violation of the Second Law of Thermodynamics by the Casimir photoinjector is the main reason for the deep skepticism of our results by the physics community. By redefining equilibrium to incorporate spatial variations in ZPE, it may be possible to reconcile our results with the Second Law.

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The Chakra Connection: Bridging the Physical and Mental-Emotional Bodies

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Introduction: New Age practices, such as energy healing and yoga, typically describe seven energy centers, called chakras, lined up from the base of the spine to the top of the head. The function of the chakras is purportedly to spin and draw in life force, prana, to keep the mental, emotional and physical parts of the body healthy and in balance. Each chakra is associated with a particular color, nerve plexus, endocrine gland, and psychological quality/issue. Although widely accepted, there has been little scientific study of the Western chakra system.

Method: In the present study, I examine exceptional, non-ordinary experiences of the chakras reported by healers, meditators, and yoga students in an anonymous online survey. The survey was advertised in social media, New Age publications, and among special interest groups. In the Chakra Experiences Survey, participants are encouraged to share any images, colors, sounds, and/or physical sensations related to the chakras in their respective practice which they have experienced directly or with a client.

Results: Results are preliminary and the study ongoing. Thus far, participants have reported physical sensations of warmth, pulsations, pressure and/or a circular sensation related to a particular chakra or chakras. Some individuals reported seeing the chakras through the mind's eye or visibly as a swirling mist. According to self-identified healers, colors vary depending on the health and status of the individual. In addition to the rainbow colors widely published, golden light was associated with the heart and crown chakras, and white light, with the third eye chakra. One healer noted that "when we open or unblock the chakras, we may get flashes, images, perceptions, from what is stored in the chakras, based on past experiences or thoughts." The images reported by participants showed consistency with psychological descriptions of the chakras. Multiple chakra activations were associated with kundalini experiences.

Discussion: Based on user experiences, chakras are both perceptible and subtle, resembling an intermediate state between physical reality and the mental-emotional realms. Historical and

recent literature on the chakras suggest that chakra activations may be an important part of human development.

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Forced-choice Psi Performance on Four Online Tests as a Function of Multiple Factors

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Introduction: We tested psi performance in four online forced-choice tasks designed to assess precognition and micro-psychokinesis on a random number generator. We used a trait-analysis approach to examine the relationship between psi performance and various demographic, personality, and target factors. The trait-analysis approach is not new to psi and has been used over the past four decades with varying results (e.g., Barušs & Mossbridge, 2017; Bierman & Scholte, 2002; Braud, 2002; Cardeña & Krippner, 2000; Hitchman et al., 2012; Honorton et al., 1998; Jahn et al., 2017; Krippner et al., 2019; Lawrence, 1993; Lobach, 2009; Mossbridge, 2017; Mossbridge et al., 2012; Palmer, 1971; Palmer & Carpenter, 1998; Radin, 1989; Radin & Lobach, 2007; Storm & Tressoldi, 2017; Walsh & Moddel, 2007; Wittmann et al., in press; Schwartz, 2007; Zdrenka & Wilson, 2017). Drawing from this work, we expected that psi performance would be revealed as a small effect and that gender, psi belief, and target richness or target interestingness would correlate with performance. We also expected that effects would sometimes be in the direction opposite of conscious intention. Traditionally called psi missing, we call such effects “expectation-opposing.”

Methods: As computational power and the availability of participants have increased with the advent of online experiments, so has our capacity to examine what factors might influence

performance on different tasks. The performance we describe in this presentation was obtained from two psi-testing platforms, one an iOS smartphone app and the other a website. The smartphone app contained three “games,” which were designed to measure micro-psychokinesis, conscious precognition, and unconscious precognition. The website presented a fourth task designed to measure conscious precognition performance in the form of a precognitive remote viewing task. We used parametric null hypothesis significance tests, including multiple linear regression and t-tests, to compare performance on these tasks against chance and also to determine how the factors we examined were related to task performance. These factors were self-reported age, gender, psi belief, psi confidence, Big-5 personality type, and target interestingness. Where clear effects were found, we pre-registered confirmatory analyses for a portion of the data set that had not previously been examined.

Results: Overall, our hypotheses were confirmed, and we also discovered additional effects. In this talk, we will present new analyses not discussed in a previous (2019) talk. Analyses of data from 5,908 individual logins and 1,001,427 trials obtained between 2018 and 2020 revealed a rich complexity of performance patterns, indicating that psi performance was influenced by virtually all of the factors we explored. Specifically, our key findings were: 1) significant expectation-opposing effects, with a confirmatory pre-registered replication of an expectation-opposing effect on a micro-pk task, 2) significant relationships between performance and psi belief, 3) significant relationships between performance on three of the four tasks with gender, 4) apparent strategy differences between men and women, where men likely used a micro-pk-focused strategy for multiple tasks while women use different strategies that depend on the task, 5) significant relationship between timing and target interestingness with precognitive remote viewing performance, with a confirmatory pre-registered replication of the interestingness effect.

Discussion: We will discuss these results and their interpretations, then describe our recommendations for future attempts to better understand performance on online forced-choice psi tasks, a recommendation strategy for which we created the acronym SEARCH: Small effects, Early and exploratory, Accrue data, Recognize diversity in approach, Characterize don't impose, and Hone in on big results.

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20 Years of Vital Force Technology: Deepening Our Understanding of the Nature of Subtle Energy Continues Deepening Our Understanding of the Nature of this Universal Phenomenon

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Introduction: Dr. Yury Kronn spent the last thirty years of his life exploring different aspects of subtle energy that led him, in 2000, to the invention of Vital Force Technology. This technology allows for capturing “blueprints” of subtle energy, using noise in the region of existing sound waves as their carrier. Dr. Kronn conducted numerous experiments working with different labs at a variety of institutions and showed that products processed with VFT can beneficially affect humans, animals, and plants on the physical, cellular, and even genetic level (Kronn, 2016). In 2017, a new approach using a region of the visible light spectrum, instead of the sound wave range, was put under trial. An experimental setup based on the non-linear qualities of light (Butylkin, 1989)—the Multidimensional Imaging System (MIG)—was created. Various tests demonstrated that MIG Technology is capable of successfully capturing subtle energy blueprints.

Methods: Vital Force Technology (VFT) is capable of capturing a subtle energy pattern coming from the electrically modulated gas discharge of specific inert gasses and of recording this as noise with the help of a high-quality audio-processing system. The subsequent audio signal playback through powerful electromagnets allows for processing a selected sample, providing it with the qualities of the subtle energy blueprints. MIG Technology functionally mimics VFT, with the only difference being, instead of using the sound wave range of frequencies, it works in the region of light spectrum wavelengths.

Results: Four years of a study comparing sound waves with light spectrum waves, when both are used as carriers of subtle energy blueprints, has shown that products created with the help of both methods work the same way. Some samples occurred to be more effective for human well-being when the two methods are combined, especially when the blueprints are taken from

plants. MIG Technology has demonstrated greater effectiveness in creating a long-lived macroscopic entanglement.

Discussion: One of the driving forces behind both technologies is a well-known model describing how the three-dimensional material world, which science mainly explores, is the last resort of the multi-dimensional Multiverse that “squeezes” itself into the dense condition of our existence. It is hypothesized that the material world is constructed according to the “blueprints” of the higher dimensions that we can call the subtle world. If this is correct, then every object we deal with in the material world has as an integral part of these blueprints. By finding out how to attune to these blueprints, record them, and then impose them enhanced on different objects, we could then be able to beneficially change these objects and their qualities.

During his life, Dr. Kronn, experimenting with people known to be sensitive testers, found that some combinations of the gas discharge recorded through specific filters, when modulated with the current of particular frequencies swept with distinct speeds (VFT), can positively affect human mood and health. Experimenting further, he enhanced the effectiveness of his experimental setup configuration by increasing the signal-to-noise ratio using a special filtering system. This allowed Dr. Kronn to record not only a powerful subtle energy signal coming from the gas discharge but also to capture subtle energy blueprints of practically any object. This breakthrough brought forward the necessity of further shielding experiments from environmental noises (Kronn, 2019).

The next generation of subtle energy technology switched from sound waves to the light spectrum of waves (MIG). Light technology was discovered to be more effective in creating a long-lived macroscopic entanglement, which is now being used for EMF protective devices entangled with the ionosphere vibrations—Schumann resonance frequencies (Nazarov, 2019).

It is hypothesized that other parts of the wavelength spectrum characteristic of the human sensory apparatus may also work in the same fashion, revealing new features of subtle energy. More research is needed to improve our understanding of the relationship between subtle energy and the Multiverse.

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Spacetime Holism

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Introduction: The basic notion of time moving as a point moving from past to future dominates Western thinking. In a recent paper in Quantum Reports, I showed that wavefunction propagation in spacetime (through the Feynman path integral or the Schrodinger equation) can be rewritten as a recursive Fourier transformation.

This approach distinguishes between measurable coordinates, which correspond to physical interactions or endpoints, and unmeasurable parameters, which are non-physical. This distinction is illustrated by a hologram, in which the holographic image you see (coordinate) is distinct from the film in the background (parameters). The result is a holistic view of time, in which the basic element of time is not a point but a line between interactions. Treating time as fundamentally holistic allows one to construct theories which connect present with future, i.e., post-select a given end state to experience a meaningful coincidence or synchronicity in the present time.

Methods: Drawing off two related formalisms—Fourier optics and the Feynman path integral—an equation for wavefunction propagation is presented which reflects the mathematics of holograms. The ontology of this formalism is simple, consisting of spacetime and its Fourier dual. The traditional approach of a spatial wavefunction which is dependent upon the time variable is discarded in favor of a 4-dimensional spacetime distribution (*block multiverse*) which does not evolve. In spite of the static nature of the block multiverse, equations of motion of a system are encoded as-a-whole into its phase profile. Dynamical change is thus possible even though the wave distribution does not evolve.

Discussion: Bohm sought to develop quantum mechanics into the implicate and explicate order. Bohm's structure emerges naturally in this formalism. This is unsurprising because Bohm's favorite metaphor was the hologram and the Fourier transform, which serve as the basis for the formalism presented here. Just as digital images and audio data can be converted into spaceless and timeless representations, respectively, the implicate order described here is without space or time parameter. The *timelessness* and *spacelessness* applies universally and

generates fruitful lines of inquiry, such as the retroactive flexibility of histories, as well as the requirement that all physical properties are defined subjectively.

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“Don’t Cross the Streams!” Parsing Potential Poltergeist Phenomena from Alleged Bigfoot Activity

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Introduction: As an academic with a foot in both the parapsychological and Bigfoot research communities, I can appreciate the allure of mixing the two, but am especially cautious not to cross the streams of scientific approaches to each, and especially recognize the futility of addressing one unknown with another. Cutchin (2020) recently speculates on numerous ways that the two fields might relate, proposing a phenomenon of “wildnisgeist,” or “poltergeists of the woods” (although I think the more literal “waldgeist” would be clearer and sound better). Reinterpreting what Bigfoot researchers commonly call “class B” reports (i.e., reports of events consistent with alleged Bigfoot behavior but lacking an actual sighting) as potential poltergeist phenomena, Cutchin produces a laundry list of ostensible similarities, including “thrown stones, raps, disembodied voices, anomalous odors, frightened pets, apports, electrical interference, and anomalous lights” (p.10). Cutchin poses a number of logical explanations for these relationships, yet seems to see no path forward towards testing or assessing their vitality. In this paper, I offer a more logical means of parsing alleged poltergeist occurrences from Bigfoot accounts in order to facilitate scientifically testing potential poltergeist phenomena.

Methods: This is an exploratory study based on qualitative data from interviews and ethnographic fieldwork.

Discussion: My own speculation on a poltergeist explanation of some alleged Bigfoot reports arose from a number of firsthand accounts I heard from amateur Bigfoot investigators. A

minority of reports included details that were qualitatively distinct from most “class B” reports as well as logically inconsistent with biological models of even potential primate range and behavior. For example, in place of the standard rock-throwing, a behavior both reported in numerous Bigfoot eyewitness accounts and also consistent with known primate behavior, certain witnesses reported being showered instead with tiny pebbles. Pebble tossing mirrors the act of rock-throwing but utterly lacks the presumed intent of intimidation. These reports seem to cluster in locations far less likely to provide habitat or cover for a large, elusive species. For example, one experiencer encouraged me to join him in attempting a Bigfoot encounter in an urban tract of “woods” that appeared to be only about an acre or two in size. The experiencers of these qualitatively different reports furthermore tend to have numerous encounters, far more frequent than most amateur investigators. For example, I accompanied one such eyewitness on a fruitless nighttime investigation, after which he claimed that he had previously “always” experienced Bigfoot across many visits to that location. That same witness later shared with me descriptions and photographic evidence of a physical nature, but “evidence” that was easily explained as misidentification of natural and normal aspects of the environment. While misidentification, imagination, and/or fabrication could account for all of these reports, the apparent sincerity of the witnesses – as well as the correlation of their unusual and unlikely details – led me to consider a more charitable explanation. The further correlation of these reports with common aspects of poltergeist activity suggests potential origins in unconscious psi or RSPK, not the least notably that they are repeated phenomena occurring in the presence of only certain human experiencers.

Rather than shrug our shoulders at where the potential line, if any, may be drawn between possible Bigfoot and poltergeist experiences, I encourage parapsychological focus on cases fitting this particular profile, which is almost certainly not reconcilable with any conceivably natural Bigfoot species. This allows for at least a research question that is clear and singularly focused: Are these experiences human RSPK phenomena? If so, then they may offer psi researchers a wonderful opportunity to study poltergeist phenomena that are longer lasting than most domestic manifestations. On the other hand, the ethics of investigating a phenomenon other than that reported by and of interest to the experiencers must be carefully navigated.

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Spatial and Temporal Coherences of Biophoton Emission: What if They have a Connection to Consciousness?

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Introduction: Growing bodies of experiments have revealed that the spontaneous biophoton emission of humans shows patterns of coherence in both spatial presentation and temporal phase-variation. The spatial coherence pattern refers to correlations of the intensity changes of biophoton emission of humans between distant anatomic locations (Van Wijk et al., 2014). The temporal coherence pattern refers to synchronous or sequential occurrences of changes of biophoton emission of humans at various anatomical locations when influenced by a systematic exogenous factor (Kobayashi et al., 2009). These weak albeit undeniable patterns of spatial and temporal coherences (to the least correlations) are different from, and thus inexplicable by, the coherence of localized photon-counting of Poisson-statistics as stipulated by Popp et al. according to the decay of induced change of biophoton emission in organisms when stressed (as cited in Piao, 2020).

Hypothesis: Humans when alive, unlike other organic forms, present and are governed by consciousness which may be inseparable from networked neuronal activities. Theories have considered biophotons to function as the means of inter-neuronal communication via physical channels like microtubes (Grass et al., 2004), and to even facilitate non-local communicating faculty (Tessaro et al, 2019). We hypothesized (Piao, 2021) that the metabolic activities responsible for photo-genesis sourcing biophoton emissions could have been modulated by autonomic neuronal control. We further hypothesize that automatic neuronal control of the metabolic activities governing photo-genesis of biophoton emission likely will lead to spontaneous biophoton emissions to present patterns of coherence in the spatial distribution, the temporal variation, and even the spectral composition.

Methods: We assumed a connection between an autonomic coherent state of the lumped neuronal networking and a chemical potential of the metabolic aspect hypothesized to regulate photo-genesis processes sourcing biophoton emission. The connection between the autonomic coherent state of neuronal networking and the site-specific or volume-confined or spatially distributed photo-genesis is rendered by way of two hypothetical transfer factors, one dictating physiological-photogenic transfer and the other determining pathological-photogenic transfer, both of which presumably must involve neuronal signaling. The physiological-photogenic and pathological-photogenic transfer factors are amenable to being implemented with spatial, temporal, or even spectral dependencies. These dependencies can be incorporated into the hypothetical photo-genesis process considered to source biophoton emission that diffusely propagates in tissue and reaches the surface for photo-electronic acquisition.

Results: The spatially correlated variations of surface biophoton emission may be interpreted phenomenologically by way of spatially distributed photo-genetic transfer of a centralized or common autonomic control with which a degree of neuronal coherence will need to associate. The temporally correlated variations of surface biophoton emission that usually occurs at

extremely long scales of time can be intuitively interpreted by assuming phase-shifted or kinetically retarded photo-genic transfers, which are also projected to be governed by a centralized or common autonomic modulation with which a degree of neuronal coherence may synchronize. Similarly, spectral shift of the biophoton emission indicating spectral correlations can be implicated by incorporating a spectral dependency of the photo-genic transfer, which may correspond to a disparity in the ability to invoke the same degree of autonomic neuronal coherence for a spectral outcome.

Discussion: This work affords novel insights to autonomic neuromodulation that may underlie the spatial and temporal patterns of coherence of human biophoton emission. Such insights may be particularly useful to developing and improving instrument capabilities for investigating altered or alternative states of consciousness such as meditation by cross-examining with neurophysiology (Rubik & Jabs, 2017).

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Psychophysical Interactions with Entangled Photons: Five Exploratory Studies

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Introduction: Quantum entanglement and psi phenomena seem to share a quintessential common characteristic – they exhibit the property of nonlocality – a shared connection that transcends the spacetime constraints of local causality. The question explored in this study was whether that shared characteristic is a mere coincidence, or whether it provides hints about the nature of psi and its relationship to the physical world. To explore this possibility, a mind-matter interaction experiment was conducted in four laboratory studies and one online study, where the “matter” was quantum entangled photons. Entanglement correlation strength measured in near real-time was provided as feedback, and participants were tasked with mentally influencing that metric.

Method: To generate entangled photons, a commercial optical system was used (quED, qutools.com, Munich, Germany). This apparatus sends a blue laser beam through a nonlinear crystal to produce pairs of red photons with entangled polarizations. The strength of entanglement was determined by measuring correlations between the polarizations of pairs of photons. To do this, each photon in a pair was passed through a separate, stepper-motor controlled, polarizer. The motors were programmed to repeatedly cycle through a sequence of 16 polarizer settings, pausing one second for data accumulation at each setting. Photons passing through the polarizers were carried via fiber optic cables to a coincidence counter, which recorded the number of detected pairs. The resulting 16 counts were combined by the quED system to produce a single, on-going measure of entanglement strength. This quantity, called **S**, is an algebraic combination of coincidence measurements first proposed by Clauser, Horne, Shimony, and Holt for paired-photons (Clauser et al., 1969).

Each of the five experiments had minor differences in protocols, but all shared a common feature: During ~30 second “concentrate” epochs, participants were asked to focus their attention toward the quED with intention to influence **S**. And during ~30 second “relax” epochs, they were asked to withdraw their intention. Feedback about **S** was provided during concentrate epochs, and no feedback was provided during relax epochs. Control sessions were conducted in a similar fashion, except no one was present (or observing) while data were collected. Evaluation of results was based on a differential measure of **S** between the concentrate vs. relax epochs (**ΔS**). The principal hypothesis was that **ΔS** would be significantly different from a chance outcome, as determined through a bootstrap analysis.

Results: The combined results of the three lab studies conducted at IONS showed that **ΔS** was associated with $p = 0.01$. The same analysis for all control studies at IONS was $p = 0.20$. The lab experiment at IMI did not produce a significant result. In the online experiment, entanglement strength declined over the course of the experiment due to alignment drifts in the optical mirrors and decline in laser power output, so only the first 500,000 **S** samples were considered to reflect high-quality entanglement. Of those, some 3,000 samples were obtained in fully

completed observed epochs, i.e., epochs consisting of 24 contiguous samples observed by participants through the feedback provided in their web browser, and 7,800 completed epochs were not observed. There was a significant increase in ΔS ($p < 0.05$) for the observed samples, and no significant change in the unobserved samples.

Discussion: Five experiments explored whether a purported form of “nonlocal mind” could interact with entangled photons, a form of “nonlocal matter.” This kind of experiment had not been previously reported, so these studies were purely exploratory. The laboratory studies at IONS suggested the presence of a mental interaction effect, as did the online experiment conducted with samples considered to represent high-quality entanglement.

The primary limitation of these studies, besides their exploratory nature, was that the results of the laboratory experiments might be idiosyncratic due to the small pool of participants involved. A second limitation was the variance introduced by the degradation of entanglement strength over time. Such limitations notwithstanding, we believe that given the intriguing results observed in these initial studies that further studies using entangled photons are justified.

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Effect of Healing Energy on Human DNA in-vitro and Ability of Various Carriers to Store Healing Energy

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Introduction: Previous studies by the author indicated Healing Arts Practitioners could change the conformation of human DNA in-vitro by measuring the winding and unwinding of the two strands. Here these studies are extended to measure the electrical conductivity of human DNA using non-linear dielectric spectroscopy (NLDS). The direct effect of healers was studied as well as indirect effects from healing energy emitted from objects like water, crystals and essential oils which had been previously exposed to the same healing energy.

Electrical conductivity of DNA has been well studied using single molecules where it has been shown that electrons and protons propagate outside and within the central channel of double-stranded DNA molecules. Such conductivity occurs via two mechanisms – classical electron hopping and quantum electron tunneling. Under resonance conditions, the latter mechanism

predominates. Resonance conditions were established by measuring conductivity at a resonance frequency of DNA, rather than an arbitrary fixed frequency using by most conductivity meters. A resonance frequency of 1.58kHz for double-stranded human DNA was used for all conductivity measures using NLDS. Conductivity measurements taken at this frequency are extremely sensitive to the subtle perturbations of the DNA molecule whether they be chemical or energetic in nature. Some types of energy increase the electrical conductivity, whereas others decrease it. Here all data is expressed as a percent change relative to untreated controls done on the same day before any energies were generated in the lab. Control changes, in the absence of any energetic intervention, are usually around 10-20%.

Four different healers, using four different techniques, were tested and shown to increase conductivity of human DNA from 20 to 50%. Similar changes, but somewhat weaker, were observed when the healers treated water or crystals which could store their energy. In some experiments, four different types of crystals were exposed to the same healing energy. The next day a stock solution of DNA was placed adjacent to the tip of the crystal and the conductivity measured after one hour. Compared to untreated controls, the energy from some crystals increased the conductivity of the DNA, but the energy from other crystals caused the conductivity to decrease.

When the treated water was added to the stock DNA solution or the stock solution was placed adjacent to an energy-emitting crystal, complex changes in the conductivity measures were observed. The changes were reproducible in subsequent trials, although the magnitude of the effects varied from trial to trial. The energy was stored in the water lattice and the crystal structures for about 2 months, gradually decreasing in magnitude from week to week.

In another series of tests, the DNA was initially damaged by pre-exposure to cell phone radiation. After being damaged, the DNA was left to recover (for an hour) by itself (no intervention) or in the presence of an energy-emitted crystal. The stored healing energy had a marked effect on the recovering DNA molecules. In one experiment, for example, after damage, conductivity of DNA increased by 25% with no intervention, but increased by 49% in the presence of stored healing energy. The magnitude in the difference between control and experimental conditions varied from experiment to experiment but always in the same direction.

The implications of this research will be discussed in terms of the feasibility of using inert carriers to store healing energy for subsequent use and to further understand the scientific mechanisms for storing subtle energies in physical carriers.

Weak Signal Propagation Reporter (WSPR): Implications for Anomalies Research

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Introduction: The Weak Signal Propagation Reporter (WSPR) is a signal processing algorithm for extremely weak radio signals. Much anomalies research also tries to detect extremely weak signals: psi, global consciousness, geomagnetic field effects, and other anomalous biological/psychological phenomena. Studies using WSPR provide a useful methodological comparison for other studies of weak signals. WSPR may also be applied directly to studies of anomalies involving the effects of the geomagnetic field and ionospheric resonances on biological systems. WSPR uses free software available on the Internet, and WSPRnet is a global, free shared database of WSPR data.

Discussion: The intended application of WSPR is to explore the effects of phenomena like geomagnetic field variability, time of day, sunspots, time of year, sidereal time, etc. on radio propagation. These same variables may affect human behavior and rhythms including psi and health (Alabdulgader et al., 2018; Krippner & Persinger, 1996; Spottiswoode, 1997). Direct measurement of geomagnetic/solar phenomena requires expensive equipment, is generally conducted at only a few stations around the world, and is not usually available at a fine temporal or spatial resolution. In contrast, WSPR has a network of hundreds of transmitters and receivers around the world; for receiving, anyone can contribute to the database; for transmitting, an amateur radio license is required. The database itself is completely open and there are websites with tools for statistical analysis.

One of the challenges in weak signal/high noise research is that uncontrollable noise plays a major role (in contrast to many fields of laboratory research where the noise can be controlled). WSPR was developed by physicist Joe Taylor at Princeton University to address this problem in radio communication. WSPR measures the signal-to-noise ratio (SNR) of extremely weak signals, with a threshold 31 dB below the noise floor (in other words, signals that normally would not be detected at all). For example, using only 0.1 watt in the 40 meter ham radio band, I am heard clearly in Antarctica, over 14000 km away.

I will use a rebuttal to one of the criticisms of psi research as an example of the application of this principle. A frequent skeptical argument against the reality of psi is that it does not obey the “inverse square law,” that the magnitude of a force declines with the square of the distance (e.g., Reber & Alcock, 2019). It is true that some psi effects seem to be unrelated to distance, at least over terrestrial distances. However, the skeptical argument is completely spurious because in communication, it is the signal-to-noise ratio, not the magnitude of the signal, which

is relevant. The SNR of my signal in Antarctica is similar to that in California, Texas, England, and nearby Norfolk – just like psi, there is no apparent dependence on distance. WSPR can't be used directly in psi research, since we do not even know if psi is a signal, or what the noise level may be. But this illustrates a way of thinking about weak signal research.

WSPR can be applied directly to measurements in other areas of anomalies research. In particular, it can measure variables likely to be relevant in the study of the effects of solar weather and geomagnetic fields on biology and psychology. Alabdulgader et al. (2018) and McCraty et al. (2012) have demonstrated a coupling between the human nervous system and resonating geomagnetic frequencies. They have used a small network of measurement sites, separated by thousands of miles and typically with a time resolution of at best 3 hours. These can provide a broad picture, but WSPR can explore correlates of the same variables on a much finer temporal and spatial scale. For example, propagation changes during developing geomagnetic storms can be measured at 2-minute intervals by hundreds of worldwide stations, with results posted immediately to the Internet.

Conclusion: WSPR offers methodological insights for dealing with weak signal/high noise environments, and potential practical measurement capabilities for anomalies research. WSPR is an outstanding example of completely open research participation and shared data.

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A Research Project to Explore the Psychology of Mental Mediumship

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Introduction: In this presentation, we describe an ongoing funded research project that explores the psychology of mental mediumship from the complementary perspectives of the sitter and the medium. These are intended to address two perceived shortcomings of the extant literature:

(i) In the extensive research on mediumship, clients have been relatively neglected; very few studies focus on the mediumistic interaction from the client's perspective (exceptions include Beischel et al., 2015; Evenden et al., 2013; Wallis, 2001; and Walter, 2008), and many formal tests make gross assumptions about their needs and expectations (for example, that they will be more impressed by unlikely but true information than by apparently trite statements that might have personal resonance). There is a need to gather empirical data that would allow us to accurately map clients' expectations and see how/whether they are met in the mediumistic interaction.

(ii) Mediums report a range of experiences that in other circumstances would be regarded as indicative of some underlying pathology (for example, in seeing or hearing things others cannot perceive, having internalized experiences that are attributed to external agencies – see Roe, 2020; Wilde et al., 2019). Surprisingly, however, practicing mediums present as psychologically healthy; indeed, healthier than the average person (Roxburgh & Roe, 2011). Initial work suggests that this is facilitated by adopting a spiritual model through which to interpret the experiences so that psychological resources can be developed that give the medium a sense of control (Roxburgh & Roe, 2013, 2014). Little is known about how that model is adopted and its effects on wellbeing so that a longitudinal study that follows the development of mediums, focusing on engagement with formal development programs, could be particularly informative.

These two themes are addressed in the form of discrete PhD programs, each comprised of a number of empirical phases. In this presentation we will report outcomes from phase 1

Methods: For (i), phase 1 constitutes an extended replication of survey work by Roe (1998) that asked the general public about their experience of consulting mediums and psychics. A market research company, YouGov, was commissioned to conduct a representative sample survey of the UK population. A sample of 2,072 adults completed the online survey between 3rd – 4th November 2020. The figures have been weighted and are representative (+/- 2%) of all UK adults.

For (ii), phase 1 consists of an ethnographic study involving participants in an unfoldment circle and short development courses (after Hunter, 2011; Roxburgh, 2006) to explore the practices involved in developing as a medium and what techniques are learnt to control mediumship. This is an important precursor to interview work in helping to elucidate the practices involved in a development circle, the experiences they are intended to elicit, and the process by which they enable the practitioner to develop their mediumship.

Results and discussion: Data collection for phase 1 is complete for both strands of the project. In this presentation we will give an overview of key findings.

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Expectancies and Psi: The Challenges of Replication

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Introduction: This paper addresses the replication problem in parapsychology through the examination of experimenter and participant belief in psi and their impact on the outcome of a psi task in three separate studies. This experiment included Study One that measured expectancies, Study Two attempted to influence expectancies of experimenters and subjects through priming after showing either randomized pro or anti-psi statements (for participants) and videos (for experimenters), Study Three made use of implicit measures to examine unconscious beliefs.

Each study made use of a standardized psi protocol developed by Daryl Bem that has been the focus of several recent replication attempts and that allows for a systematic collection of data under well-controlled conditions. The study required no instrumentation beyond a desktop computer, thirty minutes per session, and requiring statistical analyses no more complex than a t-test across sessions or participants, although more complex statistics were needed for Study 3. Specifically, the replication protocol of each study tested the retroactive priming aspect of experiment 4 of Bem (2011), by examining reaction time for congruent or incongruent pairing of words and pictures.

The results of the psi task were the dependent measure for both the psi replication attempts and for the experimenters' and subjects' expectancy effects. The pre-registered hypotheses found mixed results for both psi and expectancies.

These studies were sponsored by the BIAL Foundation and involved collaboration with a team of scientists in laboratories across Europe and the United States.

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Transpersonal Experiences and Engagement with the Departed

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Introduction: Finding ways of connecting to loved ones after death is a common goal for those in a state of bereavement. Such after death experiences may take the form of a vivid dream in which the deceased appears. Others report hearing the voice of the lost loved one or having conversations with him or her. Still others have reported spontaneous and unexpected visions or signs that seem to come from the deceased and which are experienced by others in what may be understood as ghosts. And others describe physical sensations, such as chills or a breeze in a specific area. In an effort to better understand these experiences and to further the field of parapsychology and transpersonal studies, this panel considers practices that can enable people to engage their active imaginations to communicate with the departed. This includes research involving the psychomanteum, a sensory deprivation procedure that has been used in efforts to experience the departed.

Presentation 1: Transpersonal Experiences and Grief Processing through Intentional Mirror Gazing - *Marilyn Schlitz*

The standard psychomanteum makes use of a simple protocol that occurs in a dark, quiet room with a comfortable chair and a slightly illuminated mirror. The mirror is placed just above the person's head so that the reflection shows the darkened room and nothing else. This sensory isolation procedure has been shown to trigger sensory experiences that lie outside ordinary awareness. While mainly thought to be subjective in nature, reports by those in the psychomanteum suggest that the after-death experiences were veridical and carried great personal meaning. The goals of this presentation are to discuss a research study that has the following goals: 1) Compare experiences of embodiment in the psychomanteum using three immersive conditions (Chamber, in private homes, and through a Virtual Reality Application; 2) Measure depth of experience and shift in state of bereavement and grief; 3) Conduct thematic analysis of the content of people's experiences in both conditions is to expand previous research by focusing on the psychomanteum and comparing the physical protocol and a Virtual Reality (VR) protocol to more fully explore the technique for studying transpersonal states of consciousness.

Presentation 2: *Dorote Luce*

This presentation will focus on the use of VR in the study described by Schlitz as a technique for exploring altered states of consciousness that include making use of active imagination to experience departed loved ones. Making use of VR technology may serve to expand and scale the technique for greater applications in various settings, expanding the area of study into the cross section of Transpersonal Psychology and neuroscience.

Presentation 3: Unpacking experiences with entities – *Christine Simmonds-Moore*

This presentation will discuss and integrate the results of a mixed methods study that investigated subjective experiences with ghosts using an online survey and a psychomanteum procedure. The study highlights ghost experiences as a meaning-making endeavor that is highly relevant to transpersonal psychology, parapsychology, clinical [para]psychology and understanding the nature of reality. Ghost experiences are highly tangible and perceptual-like experiences that can be challenging to those who experience them. Our study suggests that ghosts have both subjective and objective qualities, particularly among those who are strong synesthetes and that encounters with deceased loved ones, in particular, can be highly impactful.

Presentation 4: After Death Communications – *Callum E. Cooper*

This presentation will provide a brief overview of after-death communication (ADC) research history and the health benefits for those who experience them. Since 2018, a new large-scale cross-cultural questionnaire has been gathering data on ADCs from several language groups, with initial feedback from just over one thousand respondents. Now, the core team of researchers who designed and disseminated this questionnaire are now continuing their efforts with further language groups, while also breaking down existing findings to give focus to the various phenomenological aspects of the ADC for close analysis. Such recent outputs and future directions will be highlighted.

Supernatural Somatic Markers: The Effect of Belief and Analytic Thinking on Physiological Responses

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Introduction: The interplay between cognitive processes and implicit supernatural belief may manifest itself as a physiological response in the form of somatic markers. Somatic Marker Hypothesis (SMH) (Damasio, 1994) refers to the changes in the autonomic nervous system brought on by objects or events in a person's life. A particular representation can trigger this, be it an object, event or idea. The markers themselves can be 'good' or 'bad', depending on the

previous association. Therefore, this study aimed to examine implicit supernatural belief and its effect on explicit supernatural belief by examining the evidence for implicit supernatural belief using context and physiological measures.

Method: Forty-four participants were recruited from the staff and student population of the University of Derby via an opportunity sample. The measures were as follows: 'Belief in the Supernatural Scale' (Schofield et al., 2018) to measure belief, MCQ 30 (Wells & Cartwright-Hatton, 2004) to measure unhelpful metacognition, Cognitive Reflection Test – Long (Primi et al., 2015) to measure thinking style, and the Implicit Association Test (Sriram & Greenwald, 2009) to measure implicit association with belief. Heart Rate (HR) and Systolic Blood Pressure (SBP) was measured using a continuous, non-invasive cardiovascular Finometer (Finapres Medical System, Amsterdam, Netherlands). Skin Conductance (SC) was measured. The study was split into two parts. The first was conducted online, the second in a laboratory setting.

Results: Path Analysis showed a change in skin conductance between cognitively complex and cognitively simple tasks was positively predicted by mental and psychic phenomena, psychokinesis, and common paranormal perceptions. Psychokinesis is also negatively predicted by (lack of) cognitive confidence and positively predicted by negative beliefs about uncontrollability and danger. Supernatural entities are positively predicted by the need to control thoughts.

Discussion: The findings indicate a somatic marker when looking at people who believe in the paranormal. Further, this marker is activated when a paranormal believer is faced with an analytically complex task. This is in line with the Somatic Marker Hypothesis (Damasio, 1994), which refers to the changes in the autonomic nervous system brought on by objects or events in a person's life. This marker is based on association and indicates that someone who believes in the paranormal associates thinking analytically as a threat or a 'bad' thing. Whether this has to do with analytical thoughts blocking paranormal belief and experience remains to be seen.

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Intention As a Variable in Nonlocal Consciousness Research

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Introduction: What is consciousness? What is information? Those, to me, are the two great mysteries. After 50 years of experimentation research studying consciousness, I have come to this conclusion. Max Planck and many of his colleagues in the German school who created modern physics were correct. Consciousness is causal and fundamental. Spacetime arises from consciousness not consciousness from spacetime. It is not a new idea, but today, for the first time, we are able to use experimental science to test our ideas about it. It has always been a fundamental belief. The world is created by nonlocal consciousness as an expression of intention. However, humanity has formulated that concept across time, culture, and geography, whether in religious or secular terms. Scriptures the world over begin with this predicate, the only difference being the description of the intender and the cultural context. This paper explores the scientific experimentation data showing that intention is a variable that must be considered in science.

Nonlocal Consciousness and the Anthropology of Religions and Spiritual Practices

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This paper presents an anthropological assessment of religions and spiritual practices stripped of their sectarian dogmas. It discusses them not on the basis of faith, but as systems of empirical observational science developed over generations for the purpose of allowing followers the opportunity to open to nonlocal consciousness. The paper describes how religions begin as the result of a single individual having a nonlocal, or a series of nonlocal consciousness experiences, laying out the steps by which that individual's experience becomes a religion. It shows how the empirical sciences of religions, and the spiritual practices they engender are supported by scientific experimental research from many different disciplines explaining in the process why water and wine are often a part of religious rituals; why healing is common across religions; why sacred spaces are significant, how they are created; and why scriptures, and even the manner in which they are written, matter.

A Pilot Study Exploring the Relationships between Interoception, Mindfulness and Exceptional Experience

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Introduction: This project sought to explore how mindfulness and interoception correlate with different forms of exceptional experience (ExE) and to one another. Exceptional experiences (ExE) refer to a range of unusual but not uncommon ways of experiencing the world, including experiences that are often labeled as “paranormal”. Belz and Fach (2015) note that there are four main ways in which people experience ExE. These occur as anomalies in the self-model (internal), anomalies in the world model (external and on the body); dissociative phenomena (self and world are dissociated) and coincidence phenomena (unusual coincidences between the self and the world models). To date there is little research on the correlates of these different ways of experiencing ExE.

Meditation and meditative states of consciousness are associated with increased reporting of ExE and psi performance (Roney-Dougal, 2015; Penberthy et al., 2020). Mindfulness may be important in the etiology of ExE, given its association with an attitude or stance that is openly aware as well as focally attentive in a non-judgmental way to one’s inner and outer experience. Baer and colleagues (2008) identified five general qualities of mindfulness and this study explores how these different facets might relate to the different types of ExE.

Interoception refers to how much the body is being listened to within the current psycho-social context and may be important in understanding consciousness (Craig, 2009). This study explores how different aspects of interoception relate to the different types of ExE. Prior research suggests a relationship between certain types of meditation and increased interoception (Kok & Singer, 2017), but more research is needed to clarify the nature of the relationship. This study explores correlates between mindfulness, interoception, and ExE subscales and a qualitative analysis of open-ended questions about each ExE subtype.

Methods: This was a convergent mixed methods design. Psychology undergraduate and graduate students at UWG were invited to participate in an online survey which was set up in Qualtrics. The survey included a consent statement; demographics questions, a measure of mindfulness (the FFMQ), a measure of interoception (the MAIA), and the PAGE-R measure for exceptional experiences (Fach et al., 2013). This has 4 subscales measuring the different ways of experiencing ExE; ExE in the environment, internal ExE, knowledge-based ExE and physical ExE. Open-ended sections followed each subsection of the PAGE-R to ask participants to elaborate on the experience that they indicate having experienced in the questionnaire.

Results: There were 52 usable responses (14 were male and 38 were female). One of the 5 facets of mindfulness correlated positively and significantly with all 4 of the ExE subscales. Six of the 8 interoception subscales correlated positively and significantly with ExE subscales. Several mindfulness facets correlated positively and significantly with interoception subscales. A TA identified themes for each of the ways in which people described different forms of ExE.

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Life and Death from the Standpoint of Ancient Philosophy and Modern Physics

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Introduction: The idea that a living organism is not just an accumulation of molecules, but also some non-molecular structure in the physical vacuum goes back to the mists of time. As early as 5th century B.C., ancient Greek philosophers studied the question of what distinguishes living from nonliving. They believed that a special substance, ψυχή (psykhé English: soul), is possessed by not only humans and animals but plants as well. Heraclitus and Epicurus believed it to be a special kind of matter, the latter even suggested that the soul is made of atoms. Some philosophers put forward the idea that it could also be responsible for sense perception and emotions. About the same time, similar ideas of the soul sprung from Chinese philosophers who also believed that the soul is what distinguishes the dead and the living.

The modern scientific view on a human being is much poorer than that of ancient Greeks. In modern physics and biology, there is no place for feelings, thoughts, or the soul. Life is viewed as a continuous, irreversible interaction of biomolecules and emotions are associated with only our hormones produced in our body.

Recently, however, a new form of research, quantum biology emerged, which studies the role that quantum mechanics plays in biological systems. It often uses the concept of quantum nonlocality to describe the human mind. However, quantum mechanics in its present form is ill-suited for description of the processes occurring in the living organism. Quantum mechanics uses the probabilistic approach to the description of quantum systems, while the processes in a biological organism, on the contrary, demonstrate a high degree of determinism. One of the fathers of quantum mechanics, E. Schrödinger, wrote 'A single group of atoms existing only in one copy produces orderly events, marvelously tuned in with each other and with the environment according to most subtle laws... we are here obviously faced with events whose regular and lawful unfolding is guided by a 'mechanism' entirely different from the 'probability mechanism' of physics." N. Sotina develops the deterministic (causal) interpretation.

Using this approach, she proved that some spatial structures, composed of elements of non-molecular nature, accompany any quantum object in the physical vacuum. It is natural to assume that the structures of living matter are more complex than those that are non-living. These ideas are in agreement with the results of the experiment conducted by Romanian biochemist, Eugene Macovschi (1906-1985). Macovschi and his group made the following observation: after being exposed to 200 ATMs hydrostatic pressure, the living plant tissues released a certain amount of water and still remained alive, after the tissue died it behaved in quite a different way: after being exposed to 200 ATMs a dead tissue released all the water it contained. According to Macovschi, living cells consist of two qualitatively different forms of matter: a special form of structured matter (he called "biostructure") and coexisting molecular matter, the chemicals.

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We, Like Everything Around Us, Function Under Two Sets of the Laws of Nature

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Introduction: This paper explores an innovative system and is based on 30 years of assembling information through personal observation, experimentation and practical application of the ways in which the vibrational world of Subtle Energy (SE) operates and manifests in every aspect of our life.

We, like everything around us, function under two sets of the Laws of Nature. One comes from the world of solidity and seemingly separate things. In this world, our bodies are born and eventually stop functioning. These Laws of Nature are well researched. The other is from the domain of the vibrational world of Subtle Energy where the subject is not much known.

The principles of nature operating in the vibrational world of SE are very different to those we studied in school and were conditioned to follow in our life. When we know, to some extent, how SE functions, our understanding of the world and human nature is enormously enhanced. If we apply this knowledge to our everyday life and work, we will have the tools to:

- get objective information on something we want to know about that is not tainted by our subjective feelings,
- receive guidance anytime and anywhere in finding solutions to our problems, especially in situations with incomplete information,
- analyze people's nature and, even without meeting them, understand their nature, abilities, and how those abilities are being used,
- analyze the dynamics between people in different environments (family, working), with minimal information,
- and much more.

This novel and innovative system presents a systematic picture of how SE differs from other types of energy and manifestation of its principles in every aspect of being, where:

- on the deepest level of reality, we are all made from the same matter and interconnected,
- SE is not electromagnetic or gravitational in nature,
- thoughts are Energy and affect matter,
- everything vibrates, the quality of vibrations is important information,
- notion of emptiness and locality does not exist,
- in a form of vibrations nothing disappears, but stays forever and everywhere,
- past, present and future exist at the same time,
- information about everything is coded in vibrations and available anytime and anyplace, and much more.

Methods: At the present time, there is no technology available to register, measure or produce Subtle Energy (SE). The only way to learn about its properties is to analyze the results achieved in experiments and assess information related to the subject that comes to our attention from our professional and daily life.

My system of how Subtle Energy works and interpretation of information coded in vibrations started in 1987 at a research laboratory founded by the USSR Ministry of Space. At the laboratory, Subtle Energy was studied in depth on how and where to use its properties and was also applied in the selection and training of astronauts. As an MD working at the emergency ward, I started to experiment with diagnosing patients using 3-D “holograms” of organs. I was using statistics to compare my findings with a traditional way to come to diagnosis – collecting a history of a disease, tests, result of surgeries, etc. What was even a heresy to think about, turned out to become a reality. With Dr Polyakov, the head of the Laboratory, I participated in evaluating the health of 80 top managers of a large industrial company, where the two of us had to come up with independent conclusions. Our diagnoses were then compared to the managers health files. Findings showed that our results were 93% identical and were over 80% in agreement with their files. I also participated in experiments proving a non-electromagnetic nature of Subtle Energy as well as the effect of a mental program on changing EEGs. In other experiments, mental programming was used to improve the outcome of experiments. I continued my research and experimentation on Subtle Energy in Toronto, Canada for another thirty plus years. My findings have been reflected in my book *Subtle Energy: Information to Enhance, Guide, and Heal*.

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How Non-Physical Influences Show Themselves in Physics: A Proposal

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Introduction: The causal closure is assumed everywhere in physics but has little empirical support. For the spiritual to have effects in nature, and make a difference, the physical laws of nature must be modified or extended. Many thinkers in centuries past have proposed physics extensions to allow minds to operate, but to keep energy conservation at the same time. For example, actions of mind could be limited to biased probabilities in quantum mechanics (Beck, 2008), or to varying times of the chance events (Stapp, 2006). But quantum chances affect very little in organisms. Others suggest that minds could move energy from one location to a nearby place but that does not conserve energy locally. Non-local entanglement could be used, though it cannot be used for signals.

Approach: I propose that the fine-tuned parameters of quantum field theory (masses and charges) can be varied locally in order to achieve ends in nature. This is not adding extra forces to nature but rescaling the forces which already exist. The unit of electric charge e is built into the fine-structure constant $\alpha = \frac{e^2}{\hbar c} \sim 1/137$. Some physicists (Webb et al, 2001, 2011) have already proposed varying α slowly over the age of the universe. Some kind of variation, therefore, is conceivable in physics. Now, we propose to vary it over micro-seconds and within living organisms.

Bekenstein (1982, 2002) showed that very similar effects to charge variations can be obtained by varying instead the permittivity ϵ at the position of either charge (ϵ_1 or ϵ_2) while keeping charges constant. In our new application, ϵ is varied not just in dielectrics, but varies evenly in a vacuum. The magnetic permeability μ is varied inversely so the speed of light $c = 1/\sqrt{\epsilon\mu}$ remains constant. By Noether's theorem, energy and momentum are not now locally conserved, so the effects should be observable if measured in the needed scale of times and distances for molecular processes in cells. We can still do physics calculations by using forces between objects i and j varying by $\epsilon(r, t)$ in

$$F_{ij} = \frac{1}{8\pi} \left(\frac{1}{\varepsilon(r_i, t)} + \frac{1}{\varepsilon(r_j, t)} \right) \frac{q_i q_j}{|r_i - r_j|^2}$$

Implementing Mental Targets: First, we separate *metric time* in 4 dimensions from *process time* as with the order of actualization of potentialities. I have shown in (Thompson, 2019, 2020) how iterative forward and reverse steps in metric time can be used to influence intermediate variations in the vacuum permittivity to move charged bodies to achieve specific targets at a later time. This is analogous to processes of mental planning.

Discussion: This is a start of a theory for how mental or spiritual influx could have effects in nature. Furthermore, these effects on permittivity should be measurable in biophysics experiments. With this proposal, we see after some centuries how ‘final causes’ could once again be seen active in nature. This is by bringing the physical future into line with a target and doing so without time travel and without altering the historical past. Thus, we can imagine how the physical universe is no longer ‘causally closed’ and that a much greater range of scientific explanations should be possible. A wide range of phenomena could be amenable to (generalized) causal explanations.

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Energy Mindfulness: Effects on Depression, Anxiety, Stress, and Subtle Energy Balance. A Pilot Study

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Introduction: Benefits of Energy Mindfulness (EM), generally taken as a spiritual practice, are widely accepted as valid and effective among those who practice it. However, scientifically rigorous experiments to measure such results have not been carried out. This study investigates the effects of EM practices (i.e., the intentional movement of one's own subtle energy). EM is rooted in ancient practices and an updated version of this technique known as VELO was applied in this study.

Methods: This study employed a randomized controlled single-blind trial to compare results of the experimental group with a waitlist inactive control group. The experimental group performed the EM practice technically known as Voluntary Energetic Longitudinal Oscillation – VELO (Trivellato, 2017).

The measuring method of choice was the widely used and validated *DASS-21 – Depression Anxiety Stress Scale* (Lovibond & Lovibond, 1995). To measure the subtle energy balance, we used the novel *Subtle Energy Effects Scale – SEES* that is being proposed.

The DASS-21 measures the intensity of negative emotional states. It is comprised of 21 items to assess each domain in a 4-point Likert scale. The SEES was built in the same compatible pattern. Seven items carefully designed and phrased to follow DASS-21 protocol were included in a non-sequential manner into the DASS-21, resulting in a scale of 28 items. Subjects responded to the 28-item scale pre- and post- activities.

Participants were divided into four groups (G1, G2, G3, G4). The group 1 (ini $n=77$, end $n=51$) and the control group 2 (ini $n=76$, end $n=65$) were randomly assigned at a 1:1 allocation ratio and had no previous knowledge or experience with mind-body practices. The hypothesized effects of the VELO were not shared with participants during the study phase in order not to influence or distort results.

Group 3 (ini $n=167$, end $n=101$) has had contact with mind-body knowledge and/or practices. Group 4 was screened for those who were taking psychotropic drugs to assure the results of the other groups would not have such cases among subjects.

The practice was instructed equally to the four groups online via video and e-mail message. Participants performed the practice for at least 25 consecutive days during October 2020 using

audio-guides that I recorded and provided them with. Participants from 30 countries participated in the study, among which 61% were female; 51% were 30-49 years old; and 90% had completed at least a post-secondary education.

Although the original research was aimed at collecting purely quantitative data, a number of participants spontaneously wrote to me during the practice period sharing accounts of their experience while undergoing the practice. This was an unexpected surprise and the data provided was valuable. In view of this, even though it was unplanned and not in the design phase, I decided to add an optional open question to the post-practice [final] questionnaire allowing the collection of data for qualitative analysis as well.

Results: One-way ANOVA was used to compute results from pre- and post-test. G3 had statistically significant improvement in the four domains examined and G1 showed statistically significant results in the subtle energy balance domain. Anxiety was improved from measurement on time1 and time2 for all groups. Consistent with this pattern, the inactive control group also had a slight improvement in anxiety.

The G2 [control] was the only group that had no changes whatsoever in result from t1 to t2 regarding subtle energy balance. This supported the reliability of the measuring instrument (SEES). The reliability of the proposed SEES was assessed using Cronbach's coefficient. α and was .81 which indicates good internal consistency.

Qualitative results revealed improvement in energetic and emotional stability, sleep quality, well being, happiness, out of body experiences, and lucid dreaming. Some cases suggested a decrease in chronic health issues such as blood pressure and pain.

Discussion: EM appears to be as effective to ameliorate symptoms of depression, anxiety, and stress as other types of mindfulness practices and seems to bring the added benefit of increased energy balance. The results also suggest that EM practices such as VELO may bring some improvement in physical and emotional areas. The results warrant new research designed to further explore these effects.

Subtle Energy Effects

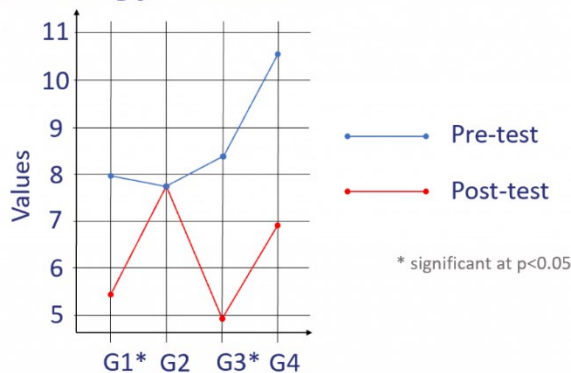


Fig. 1 Results from SEES pre and post practice time.

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Physiology, Psychology & Nonlocal Connectedness: A Pilot Study of Meditative States

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Introduction: This pilot study was undertaken to prepare for a postgraduate project on human physiology, psychology, non-local consciousness and interconnectedness during states of meditation and yoga compared with normal activities.

The Princeton Engineering Anomalies Research (PEAR) lab over many years has shown that consciousness is non-local and can influence external physical processes. Thus, we can now research the human relevance of that knowledge in much greater detail using their technology in mainstream psychological, physiological and sociological experiments.

Where this pilot study departs from the usual type of cognitive neuroscience studies is by simultaneously making physiological measurements with an app, recording the conscious

experiences of the psychologically profiled participants, and running a Random Event Generator to observe the effects of both the participants and experimenter. Overall, this study initiates a path to answer the following questions:

- 1) Do physiological measurements correlate with psychological experiences such as meditation, and with psychological profiles?
- 2) Are there correlations between these and non-local consciousness?
- 3) Are there any indications of non-local connections between participants and experimenter? If so, what implications would this have for the future conduct of scientific research?

Methods: This study included the following methods.

Psychological profiling: Six participants filled in the Beliefs About Consciousness and Reality Questionnaire of Baruss and Moore, and the Psychological Wellbeing Scale of Carol Ryff. After sessions, they described their experiences of being a participant.

Meditative practices: Two types of meditation were compared: a breath focused meditation and a body-focused yoga. Both these modalities emphasize whole-body conscious presence. The 6 participants did 3 baseline, 3 meditation and 3 yoga sessions of 10 minutes each.

Physiological measurement: An iPhone app, Welltory, was used to measure heart rate variability (HRV) etc. before and after all sessions. It also provided the balance of parasympathetic and sympathetic nervous activity, stress and coherence of heart, lungs and nervous system.

REG: A Psyleron Random Event Generator was used in “FieldREG” mode for the duration of every 10-minute session.

Analysis: Data were tested for correlations between type of meditation, physiological measures and psychological wellbeing scores.

REG: Output data is still in the process of being statistically analyzed in relation to the other data types.

Interim Results:

Psychological: Participants all fell into the Extraordinary Transcendentalist category of Baruss and Moore, and all displayed moderate to high levels of psychological wellbeing (Ryff). Participants reported improved psychological states after meditation.

Physiological: Some physiological factors of HRV were significantly correlated with meditation compared with baselines. HRV clearly improved which implies health benefits. The difference was less obvious with yoga.

REG: An early indication is that there are two broad types of conscious experience that produce notable deviations from baseline in the FieldREG trace.

Discussion: The results of this pilot study have confirmed previous research regarding the physiological wellbeing resulting from meditation. Further, there were positive correlations between the participants' levels of perceived wellbeing and heart rate variability parameters. The results extend and complement the research of others who are using the REG strategy for measuring the physiology of meditation. For example, it appears that the strong deviations produced by emotional states, i.e., stimulation or suppression, contrast with minimal deviations during the detached state of meditation. However, the statistical analysis still needs to be completed.

During sessions, it was frequently noted that conscious shifts in the experimenter affected the REG. There were also some striking examples of the experimenter and the participant having a similar psychological experience at the same time that produced a marked reaction in the REG. Could this indicate a shared conscious experience?

These effects may challenge or at least extend some of the methodological assumptions of REG experiments and open up the possibility of including interpersonal, non-local connectedness between participants and experimenters by using the tools of 'parapsychologists' in future conventional consciousness research.

Dinsdale Award Lecture Why All Scientists Should Take Psi Seriously

Jessica Utts

Methods to Unlock Telepathic Ability by Activating Pineal Gland and Still Cerebral Cortex

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Introduction: Telepathy, an established scientific fact, is derived from two Greek words, 'tele' meaning "afar" and 'pathos' meaning "feeling". It is the action of one mind on another at a distance and without communication by means of the senses. In *Telepathy* by William Walker Atkinson (1910), the Society for Psychical Research conducted experiments on telepathy, thought-transference and similar phenomena. These experiments have been fully reported and these reports comprise several volumes, which give the world a valuable record of psychic phenomena to science.

Methods: The pineal gland is the thought transmitter; it serves as a conduit for telepathic communication. It is a small cone-shaped gland at the back of our brain, located exactly at the top of the spinal cord, which in Hindu traditions is called the extra-sensory third 'eye' through which perception of the world is not limited to the physical senses. According to Lang et al. (2002), every emotion you feel, every moment of joy and fear, produces a chemical enzyme in your body. Each enzyme passes through the pineal. The pineal is the system of entry into the Divine Mind. Some thoughts and feelings become springboards; others become obstructions. Doubt is one blockage that prevents the manifestation of our desires. Doubt creates a biochemical reaction, which activates a neuron carrier in the brain that flows from the pituitary gland to the pineal and blocks the gateway to the Divine Mind. This becomes the forgotten information.

The Cerebral Cortex is where thinking, logic, deduction, evaluation, short term memory etc. takes place. It also controls the function of the five physical senses and extremity movement. It gathers information for the various levels of consciousness. This area constantly interferes with telepathic communication and must be stilled in order to receive instruction through the higher mind (Jasmuheen, 1995). As a result, if we *quiet* the cerebral cortex the third eye gets activated, where the thoughtless form creates a pathway to enter into the 'Divine Mind' through the pineal. Thus, we can use telepathy to connect with the higher dimensions of consciousness. It is the next step in our evolution.

Discussion: Equate your brain to a mobile device. A mobile device can receive and send signals to another device, which is far away. Likewise, a human brain can receive and transmit information to another brain. We are not able to telepathically communicate. This is because there are two major blocks, which prevents the brain from 'Telepathic Communication'. They are,

Block 1: We are not aware our brain has telepathic ability. Because we doubt, is it possible to transfer thoughts or telepathy exists? As we have seen 'doubt' is one blockage which prevents the manifestation of our desires. The same happens here, the doubt that telepathy is impossible creates a biochemical reaction and activates a neuron carrier in the brain that flows from the pituitary gland to pineal and blocks the gateway to the divine mind which becomes the forgotten information.

Block 2: Our brain is engaged in various thoughts and desires. Cerebral cortex is the womb where the birth of thought forms and desires are delivered. So, one must still the cerebral cortex to activate the third eye, where the thoughtless form clears the block in the pineal and creates a pathway to enter into the divine mind. To still the cerebral cortex, we can use meditation techniques and other motivational programs to activate the third eye unlocking the 'telepathic ability.'

During ancient times in India, people used telepathy for communicating. They say the pineal gland served as the medium of receiving and transmitting information. But, as time passed, people were slowly pulled into the whirlpool of scientific discoveries and technological development. The pineal gland has become dormant. For an individual to experience telepathic power, it takes time for a person to unlock the blocks to fully use his/her telepathic ability.

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Qualitative Analysis of First-Person Accounts of Noetic Experiences

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Introduction: The term “Noetic” comes from the Greek word *noēsis/noētikos* that means inner wisdom, direct knowing, intuition, or implicit understanding. William James, American philosopher and psychologist, defined noetic experiences as “states of knowledge. They are states of insight into depths of truth unplumbed by the discursive intellect. They are illuminations, revelations, full of significance and importance, all inarticulate though they remain; and as a rule, they carry with them a curious sense of authority for after-time (James, 1985, pp. 380–381).” Strong cultural taboos exist about sharing these experiences. Thus, many may not feel comfortable transparently discussing or researching these topics, despite growing evidence that these experiences may be real. The study’s objective was to qualitatively evaluate first-hand accounts of noetic experiences.

Methods: Participants completed an online survey that collected demographic data and four open-ended questions about noetic experiences: 1) Please describe in as much detail as

possible how you access information not limited to our conventional notions of time and space; 2) Please describe in as much detail as possible how you access energy not limited to our conventional notions of time and space; 3) Please describe in as much detail as possible how you express information not limited to our conventional notions of time and space; 4) Please describe in as much detail as possible how you express energy not limited to our conventional notions of time and space. The questions were separated into information and energy themes because the anecdotal expressions that people perceive contained noetic experiences as information and energy separately. Thematic analysis was used to characterize the data by grouping repeated semantic code patterns into meaningful categories/themes, as Braun and Clarke described (Braun & Clarke, 2006) using six steps: familiarization, coding, generating themes, reviewing themes, defining and naming themes, and reporting. Thematic analysis was chosen because it can provide a straightforward yet rich description of participants' beliefs and experiences. The four questions were meant to elicit more comprehensive and detailed responses from the participants (rather than evaluate separate themes for each question), and thus, the responses were considered as a whole for the thematic analysis.

Results: 521 English-speaking adults from around the world completed the survey. Patterns emerged when we examined the dataset as a whole and the number of participants mentioning each concept. The top ten codes were: knowing the future (219); expressing to or sharing with others (197); impacts decision making (196); intuition/"just knowing" (184); meditation/hypnosis (183); inner visions (171); setting intentions/getting into the "state" (157); healing others (152); writing for self (151); and inner voice (151). There were five main themes and multiple sub themes identified in the data: 1. Ways of Engagement (intentional and unintentional); 2. Ways of Knowing (intuitive, embodied, sensorial, emotional, direct); 3. Types of Information; 4. Ways of Affecting (healing, decision-making, influencing others, influencing systems, objects, the environment; and 5. Ways of Expressing. Subthemes were also identified.

Discussion: This study's findings support the idea that noetic experiences are widespread and experienced in specific and variable ways. The results also align with previous qualitative research on exceptional experiences. Several limitations of this study should be considered, such as subjective reporting, difficulty ascertaining causality, errors in memory recall, and limits in generalizability based on a specific sample pool. Regardless, the results brought great insight into people's phenomenological experience of the noetic. Future research will include continued investigations into the nuances of these themes and also establishing standardized methods for evaluating them. Results from future studies would also then inform curricula and therapies to support people with these experiences.

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Positive Effect of Perceived Contact with the Dead: An Exploratory Study of the Transformative Power of Personal Development Workshops

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Introduction: Personal development workshops are increasingly popular. This study evaluated the relationships between measures of well-being, interconnectedness, and extended perception in a variety of these workshops, and it explored which kinds of workshops and individual characteristics predicted changes in these outcomes. It also explored transformative, noetic, transpersonal, and relational experiences during workshops and their association with interconnectedness, well-being, and extended perception measure changes.

Methods: In a prospective, uncontrolled, within-participant design study, adult participants completed questionnaires and online tasks before and after personal development workshops. Two sets of analyses were completed, 1) examining the relationships between measures using only pre-workshop measures using Spearman correlations and 2) exploring change scores pre-to post-workshop and workshop and individual characteristics as predictors of those change scores using Wilcoxon signed-rank tests and multivariate nonparametric methods. A Kruskal-Wallis nonparametric analysis of variance and nonparametric regression models were used to explore whether transformation and noetic, transpersonal, and relational experiences were associated with outcome changes.

Results: The subjective sense of interconnectedness and well-being were intercorrelated, but extended perception task performance was not correlated with those factors. General personal development workshops improved subjective interconnectedness, well-being, positive emotion, compassion, and reduced sleep disturbances, negative emotion, and pain. The workshop formats of lecture, small groups, pairs, and discussion were significant predictors of well-being outcomes. The workshop content categories of meditation and technology tools were also predictive of well-being outcomes, with meditation being the most consistent predictor of positive well-being changes. Conscientiousness was the only significant individual characteristic predictor, although it was associated with increases in some well-being measures and decreases in others. Participants reported positive changes that a majority felt would affect their behavior and relationships. Perceived contact with the dead was associated with an

increased interconnectedness, as was a meaningful experience with wildlife or animals. A meaningful experience with a person, place, or thing was associated with increased well-being.

Discussion: This study provides evidence for the positive relationship between the subjective sense of interconnectedness and multiple well-being measures and the beneficial effects of personal development workshops. These analyses support the idea that engaging in personal development workshops is positively transformative.

“But I Survived”: Dream Premonitions and Survivor’s Guilt

Eric Wargo

Independent Researcher

Introduction: In most scientific as well as popular literature on ESP phenomena, Psi is reasonably presumed to serve an adaptive function for the individual (e.g., Carpenter, 2012). It is therefore most intuitive to think of premonitions (i.e., precognitive dreams and visions that seem to foreshadow a later death or disaster) as relating to some psychic radar ideally helping the individual avoid dangers or avert catastrophes imperiling others in their family or community.

However, while accounts of threat-avoidance following on dream premonitions do exist (e.g., Dossey, 2009), seemingly far more prevalent in the literature (e.g., Krohn & Kripal, 2018) and in personal accounts collected by the author (Wargo, 2021) are premonitions that are not recognized as such until after disaster or tragedy strikes, as well as premonitions that are too imprecise or symbolic ever to be usable for threat avoidance. Indeed, the experience of guilt following a calamity that had seemingly been foreshadowed in a dream is such a common experience that it may even be the most important adverse mental-health consequence of precognition.

Argument: I offer an alternative hypothesis about precognition in general and premonitions in particular—one that helps account for why, if precognition orients toward the individual’s survival, premonitory dreams so often focus on tragic outcomes that in reality cannot be avoided. Precognition does reflect an unconscious survival orientation, I argue, but its conscious manifestations, such as in dreams, are not radar-like warnings about future avoidable outcomes. They are instead conscious thoughts about the dreamer’s own survival, displaced backward in time from the aftermath of future traumatic brushes with death. Instead of psychic radar, premonitions may really be a preemptive part of a working-through process in processing future traumas.

In one respect, this argument harkens back to the insights of Victorian psychical researcher Frederick W. H. Myers, who theorized that dream premonitions reflect occult interpersonal connection, the reception of a telepathic signal from another person in crisis (Kripal, 2010). I argue that the signal is indeed one of crisis, but that the connection is *intrapersonal*, coming from the individual's own future—a "psychic" (but really probably quantum-neurobiological) connection to the future traumatized and perhaps guilt-wracked self.

Rationale: That precognition may reflect the individual's own temporally displaced thoughts and emotions derives support from the large body of research on presentiment in parapsychology (Mossbridge et al., 2012), and evidence from a range of emerging research areas also lend it credence. Those areas include quantum computing (Rubino et al., 2017), quantum biology (McFadden & Al-Khalili, 2014), and the neuroscience of dreaming and memory formation (Llewellyn, 2013). Additional indirect support for the hypothesis that dream premonitions are anticipatory of traumatic experiences and guilt comes from the psychoanalytic theory of trauma (e.g. Freud, 1984a; Žižek, 1989), as well as from structural linguistics (Saussure, 1983), which insists upon the essentially contrastive nature of signification (cf. Freud, 1984b): The highly salient existential signal from one's future surviving self, "I'm still alive," can *only* be carried by information that somebody else, perhaps a loved one or friend or even an anonymous victim of a calamity in the news, was not so lucky. But such a signal comes at an emotional cost.

Through close examination of premonitory dream accounts and the circumstances surrounding them, including Samuel Clemens' famous dream of his brother Henry's death (Twain, 2010) among others, I will show that survivor's guilt is a common theme in premonitions and a likely key to understanding these baffling phenomena.

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Panel: Progressing Ganzfeld ESP Research

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Introduction: There have been numerous claims of replicable evidence of psi in the ganzfeld (e.g., Bem & Honorton, 1994; Storm et al., 2010; Storm & Tressoldi, 2020). However, these claims have been challenged on the grounds of the possible presence of questionable research practices (Bierman et al., 2016) and sub-par methodology (Wagenmakers et al., 2011), an issue which also greatly affects the discipline of psychology. In recent years, some parapsychologists have turned from the ganzfeld towards laboratory methods involving unconscious measures of psi that are modeled on methods that are more familiar to researchers in mainstream psychology, such as Bem's 'feeling the future' studies (Bem, 2011).

However, other researchers (e.g., Watt et al., 2020; Roe et al., 2020) have argued that it is premature to move away from the use of a method that has such a long track record in parapsychology. Furthermore, meta-analyses have identified internal patterns (such as higher scoring with studies employing selected participants) that could be used by researchers when designing their studies, to help improve the likelihood of obtaining above-chance scoring (Cardeña, 2020; Storm et al., 2010; Storm & Tressoldi, 2020). This would, in turn, facilitate more process-oriented research.

In this panel, researchers who have conducted ganzfeld studies will each give a presentation on their work to set the context for a discussion with each other and with the audience on how to progress ganzfeld ESP research.

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Anomalous Mind-Matter Interaction and the Nature of Causality

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Introduction: Are some categories of psi, specifically psychokinesis or anomalous mind-matter interaction, fundamentally inconsistent with our understanding of causal laws? Some physicalists effectively rule out the possibility of psychokinesis on the basis of our current understanding of the world's causal laws. The physicist Sean Carroll has argued that our best

understanding of causal laws does not support such anomalous mind-matter effects. Psi skeptics such as Carroll argue that fraud or error is more likely than such mind-matter interaction being veridical. However, such arguments against accepting this data rests on the assumption that our knowledge of the causal laws are complete (or close to complete).

Some philosophers inquiring into the metaphysics of causality might argue that our current understanding is incomplete. They might note that, as Hume argued, we lack the ability to fully characterize causal laws. Such an argument arguably weakens the case that we can rule out anomalous mind-matter interaction a priori. However, philosophers on the metaphysics of causality have also noted that popular notions of the “laws of nature” are based on controlled experiments that may not always reflect some aspects of world because our reality is rarely that controlled. They have often argued that a superior characterization of casual relationships is based on dispositions and tendencies that are context sensitive. Instead of causal relationships in terms of iron-clad “laws,” the behavior of the world is better characterized by powers or potencies that are expressed dependent on various conditions. Such a view appears to be supported by quantum mechanics, which describes the behavior of subatomic particles fundamentally in terms of tendencies and possibilities.

Important gaps remain not only in our knowledge of causality, but on the nature of consciousness as well. Arguably, anomalous mind-matter interaction, as it is presented in the laboratory psi literature, is linked with the metaphysics of mind as well as causality. Arguably, the persistent gaps in our understanding of these domains make it difficult to rule out a priori the possibility of psychokinesis. Further, the intersection between these two domains (the metaphysics of causality and consciousness) likely impinges on the question of true volition or free will. Although they are not the same, it does appear that psychokinesis requires true volition, which our conventional scientific understanding also has difficulty explaining. In order to make progress, we must consider how the metaphysics of causality might be linked with consciousness in a way that could support real volition and psychokinesis.

Perhaps we might link the view of dispositionalists — who argue that the world’s causal nature is best characterized by potencies and dispositions. Is this in turn supported by the wave function of quantum mechanics—with consciousness? I propose doing this in two steps. First, we might follow an argument from Ismael and Schaffer (2016) that the quantum wave function requires the presence of a common ground. Specifically, they argue that a quantum or common ground coordinates the probabilities of the wave function. Their proposal that this quantum ground resides in an ontologically prior high-dimensional space, outside of our spatiotemporal order. We can take things a step further (beyond Ismael and Schaffer) and propose that this quantum ground also governs or influences the behavior of the subatomic particles (and thus resolve the measurement problem).

The second step is to argue that this non-structural and fundamental quantum ground is the intrinsic aspect of the world and therefore (via Russellian monism) also a ground for consciousness. Thus, the inherently non-local quantum field is also the base of conscious experience. This becomes a version of cosmopsychism, where all conscious organisms are aspects of the consciousness of the universe.

This framework, where conscious experience is ultimately rooted in a non-local field of consciousness, supports such psi phenomena as telepathy, remote viewing, and precognition. This framework also arguably is consistent with both free will and psychokinesis. This quantum field of aware potentiality is likely the ground of fundamental causality. As a result, this fundamental field of aware quantum potentiality is arguably the basis of true volition. And that our own volition is ultimately rooted in this more fundamental nonlocal field suggests the possibility that mental intention might remotely affect physical processes, as the psi data on psychokinesis suggests. Thus, with individual consciousness rooted in the nonlocal quantum ground, mental intention may be able to influence the field of potentialities which constitute our world as well as the relationships that describe behavior.

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Replication Study of Causally Ambiguous Duration Sorting (CADS)

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Introduction: The “arrow of time” is so fundamental to our present language and logic that we may think we can logically rule out retrocausation when in fact the lack of retrocausation was built into the axioms underlying that logic. In the absence of these presuppositions, the existence of retrocausation may be no more self-contradictory than the claim that retrocausation does not exist. (Kafatos & Nassikas, 2011).

Empirical results have demonstrated a seconds-to-minutes apparently retrocausal effect manifesting as a correlation between the number of photons measured in an optical system and the future duration of that same photon-detection process (Mossbridge, 2019, 2021). This study is an attempt to replicate this effect.

Methods: Hardware and software were developed independently from those of Mossbridge (2019, 2021), but were operated using the same protocol. Briefly, a light source and photon counter were turned on at the beginning of each run, 33 seconds of photon counts were gathered (in 3 11-second cumulative bins), then a quantum-seeded pseudorandom process was used to select the remaining amount of time photons would be counted. After that duration, the light source and photon counter were turned off. Differences in apparatus include photon detection by a single photon counting module (SPCM), pulse counting using a field programmable gate array, random number generation by discrete logic implementation of an 80-bit shift register pseudorandom number generator clocked by muon detections, a LabVIEW program operating the experiment and appending data to a file, and an RC circuit for ramping the detector voltage up and down which is optically isolated from the computer.

Results: Data have been collected from approximately 34000 trials during 1/2 year of continuous operation from July 27, 2020 to Feb 21, 2021 inclusive. Analysis is in progress.

Discussion: “Post Selection” experiments have demonstrated time symmetry in the evolution of quantum-mechanical systems and are congruent with the standard model of quantum physics (Aharonov et al., 2015). Those experiments support the possibility of apparent retrocausation and show a connection between the direction of causality (arrow of entropic time) and the boundary conditions of the system. Conceivably therefore, such a relationship might be turned around creating what one might call a “time telescope” whereby measurements of retrocausal effects allow us to observe boundary conditions that may be distant in time.

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A German Version of The Retroactive Priming Task Shows Mixed Effects

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Introduction: We studied the retroactive priming effect with the software system from the study by Bem (2011, Exp. 4) where choice reaction times to a positive or negatively valenced photo were shown to be influenced by a following positive or negative word. In that prior work, emotionally congruent photo-word pairs led to shorter reaction times than emotionally incongruent pairs. Since the potentially influencing word appears after the button is pressed, this effect is described as retroactive psi effect. Here we report on two replication studies with German words. Two new analysis methods were applied: (1) since a response time could be driven by a regular anterograde priming effect of the word from the previous trial onto the photo of the subsequent trial, we assessed the influence of this standard anterograde priming effect; (2) in study 2 we controlled for potential false positive effects by utilizing a specially designed sham control task.

Methods: We tested $n = 100$ subjects on the computerized retroactive task in study 1; in study 2 we tested 95 subjects each (50 female) on the experimental and the sham control task. The dependent variable is the retroactive priming (RP) effect that was calculated by subtracting the mean RT (mean log RT) of incongruent trials from the mean RT (mean log RT) for congruent trials. A positive RP (log RP) indicates a faster response time for congruent trials than incongruent trials ($H1: \text{mean RP} > 0$). For the sham control task in study 2, the same software environment was used with the sole difference of having a row of seven O's appearing after the photo. Since no real picture-word pairs are established, any positive picture-word effect would have to be labeled as false positive (Walleczek & von Stillfried, 2019).

Results: According to confirmatory analyses the anomalous cognition hypothesis concerning a positive psi effect is rejected in both studies. There is a mean retroactive priming (RP) effect of 6 ms in study 1. Exploratory post-hoc analyses show a positive retroactive priming effect (33 ms) for men only (women: -17 ms). Men and women are significantly different from each other regarding RP ($p < .008$) and log RP ($p < .011$). Men differ significantly from 0 for RP ($p = .014$) and log RP ($p = .017$). In study 2, a mean negative RP effect of 16 ms is detected, no gender difference is found. This overall negative priming value, faster reaction times for incongruent

than for congruent pairs is marginally significant from 0 for RP ($p = .081$) and significant for log RP ($p = .022$). There is no significant effect in the sham control task and no substantial anterograde priming effect.

Discussion: From the perspective of a strictly confirmatory analysis, for these studies, the psi hypothesis of a retroactive priming effect in the German language version is rejected. The significant exploratory post-hoc analyses are nevertheless informative. We report typical patterns of outcomes in experimental parapsychology (Walach et al., 2009), namely there are clear deviations from null effects, which often cannot be attributed to chance variations (the negative log RP value across men and women in study 2), and deviations are not reproducible (the effect in men in study 1). We discuss the possibility that the IAPS photos, which were validated in the USA in the 1990's and how culture-specific scenes might be outdated and not representative as emotional stimuli for young participants from central Europe. This can be seen in many category mistakes and slow reaction times in our student population. Future studies should attempt to use a different set of photos adjusted to the study population.

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Subtle Energy Perception: Pilot Study with a Buddha relic

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Introduction: One manifestation of clairvoyance is the ability to gain information about an object through extrasensory perception. Our research institute had the privilege of caring for a Buddha relic from a recently deceased Buddhist Lama. Buddha relics are crystal-like objects that are purportedly found among the cremated ashes of Buddhist spiritual masters. Because these objects are believed to emanate subtle energy, we were interested to test the ability of professional clairvoyants to detect the presence of the Buddha relic without visual cues.

Methods: A perception test was conducted with seven subjects, one at a time: four self-identified clairvoyants who provide related professional services in the community (referred to as Seers), and three laboratory staff who do not consider themselves to possess clairvoyant skills (as control subjects). Strict blinding procedures were used to ensure that staff could not convey cues related to the test. Prior to the start of each test, a Research Assistant (RA) placed the relic in an opaque container in the center of a table inside an electromagnetically shielded room. Ten identical, empty containers were lined up behind the first container and labeled numerically. After the RA was out of the room and out of sight, the Principal Investigator (PI) escorted the subject into the room to sense any energetic characteristics perceptible from the relic inside the first container-, without opening the lid or touching the container (Figure 1). After 5 minutes of the subject becoming familiar with the sensations associated with relic inside the first container, the PI escorted the subject out of the building while the RA returned to the room and moved the relic into one of the numbered containers (chosen according to the output of a random number generator). The RA also lifted the lid of each of the other nine containers so as to equalize the amount of physical manipulation of the containers. After the RA was out of the room and out of sight again, the PI escorted the subject into the room and monitored while the subject tried to detect which container held the relic without opening or touching any of the containers. Once the choice was recorded, the PI escorted the subject out of the room so that the test could be repeated for a total of 10 trials. The number of trials was chosen to allow for sufficient statistical power when making a choice of one out of ten, based on previously reported methods (Yount et al., 2004).

Results: During the period when the subjects were becoming familiar with the sensations associated with relic inside the first container, all of the Seers reported discernable energetic perceptions that were distinct from the empty containers. None of the control subjects reported discernable energetic perceptions. The results of the ten test trials were at the level expected by chance for all subjects (see Table A).

	Control Group	Seer Group
Average % Correct Choices	13.3 +/- 3.3	7.5 +/- 2.5

Table A Average Percentage of Correct Choices

Discussion: While preliminary and inconclusive, we found no evidence that clairvoyant seers were able to detect the presence of the Buddha relic without visual cues. The lack of discernment may be an indication that the subtle energy associated with the relic emanates in space too far to be distinguished from an empty container near the relic (within 2 feet), or that it leaves traces in the containers that linger and confound subsequent trials. The fact that the seers reported discernable energetic perceptions that were distinct from the empty containers highlights the need to maximize the signal to noise ratio for measures tests of subtle energy perception. Other interpretations of the data will be discussed.

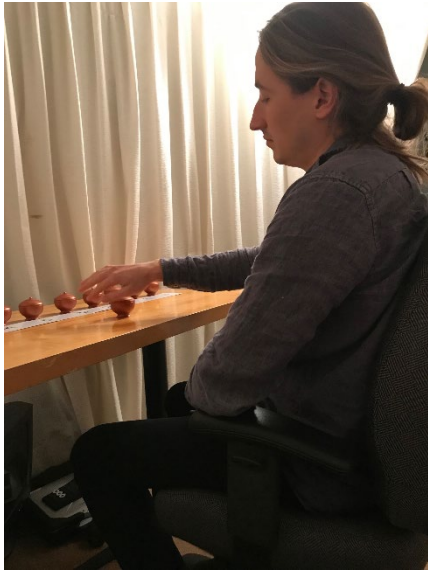


Fig. 1 Before the perception testing began, subjects were given to opportunity sense any energetic characteristics perceptible from the relic inside of the container.

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