

Journal
of
Parapsychology

Volume 87, Number 1
Spring 2023

ISSN 0022-3387

Journal of Parapsychology

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ISSN: 0022-338

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EDITORIAL

On Archetypes, Psi, and Poltergeists – A Philosophical Review and an Update on the 21st Century Poltergeist

John G Kruth

Rhine Research Center

When we perceive the world around us, our expectations and previous experiences shape our observations. When we hear a siren, we expect to see a fire engine, but we would not be surprised to see a police vehicle or ambulance because those are associated with the same sound. We would be surprised to encounter a small bicycle with a siren mounted on the handlebars when that sound rings through our mind. Jung (1919) identified archetypes as instinctual patterns of expectation that are commonly recognized by all humans, but he also acknowledged the role that prior experience has in generating patterns of expectation in our minds. It is unlikely that humans have a common archetype for a bicycle, but if we live in a neighborhood where bicycles with sirens are the norm, we may develop an experiential expectation of this image.

Our expectations often influence our perceptions of the physical world, but they also influence the construction of our thought processes. Our understanding of the world is causally based, mostly designed by our observations of the physical events and how they seem to arise from previous events. For example, when we see a ball bouncing down a driveway, we immediately look to see who threw the ball. There is an expectation that a bounding ball would be set in motion by a causal event that would proceed the movement, like a child throwing or kicking the ball. We would not assume that the ball would move on its own since we expect that the movement was initiated by something that caused the movement to begin.

These patterns of anticipation or expectations of causality allow us to easily adapt to the world around us and to navigate our environment efficiently. Stanford's (1974) Psi Mediated Instrumental Response (PIMR) model incorporated psi into cognitive processing and provided a utility for the use of psi in our daily activities. When weighing our options, Stanford recognizes that we will use every resource available to resolve our situation most effectively. By acknowledging that psi is available to us at all times, Stanford proposes that we would use information obtained by ESP just as we would use any other information available to address our needs. Carpenter (2004) expanded on this theory in his First Sight Model of Psi by describing ESP as the primary source of information in our decision-making process. Information obtained by extra-sensory means guides our choice of archetype or experiential pattern and provides additional information to determine which perceptions should become conscious and which should remain hidden in the shadows of the subconscious.

These models discuss psi information as a tool to help guide our thought processes, make better

decisions, and find more efficient ways to reach our goals, but what if the information obtained by ESP is actually not obtained at all but is actually present at all times? What if the experiential patterns that we have created mask the true source of the information and lead us to apply causal patterns that are flawed and biased? This could not only affect our current perception of the situation, but also contribute to the development of subsequent experience-based patterns based on a flawed foundational premise. To continue our previous example, when we expect to see a fire engine, we might miss the odd situation where a bicycle is passing which not only could create a dangerous situation for the cyclist, but also could also cause us to misinterpret this event and those that follow.

There is little argument that humans are pattern seeking beings and that this evolutionary trait has been extremely beneficial to our success as a species. Might this highly valued trait be the exact lens that limits our ability to see the world clearly? Might the expectations of a world ruled by physical causalities tempt us to not only miss the events that fall outside of our historical experiences but also limit our explorations into events that do not fit the model of a causal worldview?

Changing expectations

When I consider that our model of the world influences our perceptions, I begin to wonder if changing that model might impact our passive perceptions, and our expectations of what is possible. Individuals raised in environments where paranormal activity and psi events are considered commonplace may become more likely to recognize these events. Their acceptance of this type of activity, e.g., nonlocal knowing or knowledge of future events, may lead them to practice these skills and even become successful at purposely inducing them.

If we consider belief and exposure to psi as a transient psychological state, we may be able to design a study to explore how an environment conducive to psi would affect an individual's performance on a psi task. This is exactly what Lange, Laythe, and Houran (2023) did in their examination of what they call the *enchantment-psi loop*. They led people through an activity that demonstrated paranormal events and provided evidence to support psi, and then they explored whether their exposure to this stimulus would generate a psychological state that would impact the results of a simple ESP test. These results were compared to the scores of people who were shown a skeptical video that questioned whether psi was possible. Their results were mixed, but the study design directly addresses the question of how our view of the world can affect psi performance as a transient psychological state rather than an unchanging personality characteristic.

But not all experiences will lead to more acceptance of psi and the paranormal. Some people are negatively reinforced to dismiss psi events as fantasy or wishful thinking. Storm (2023) presents a study to explore whether nonbelievers can be encouraged to be more noncompliant in a card-guessing task. Using a model that has rarely been discussed in published literature, he purposely encouraged nonbelievers to attempt to miss their target, leaving us with a question of whether they were truly demonstrating psi-missing or just another form of psi that agreed with their dominant worldview.

These articles attempt to create an artificial laboratory environment to explore the effects of cognitive patterns and expectation on the performance of psi tasks. But what about events that occur in our daily lives?

A Changed World

The events of 2020 affected nearly every person on the planet. Due to the global pandemic, we were forced into isolation and the normal patterns of behavior were not only broken but also called into question. How important is it to meet with people in the same physical location? Can we manage activities from a distance? Technology was recognized by many people as a lifeline to the world instead of being relegated to being a tool of necessity. Even very personal activities like visits to the doctor were reimagined as remote video sessions that would be effective in nearly every situation. Everyone had their normal patterns broken, and we began forming new experiential patterns that would allow us to navigate the changed world. When we are in periods of transformation and creatively seeking new patterns to guide our behavior, our previous physical and psychological habits are set aside to allow us to see through the unconscious veneer of expectation to better understand the underlying archetypes and collective instincts that are the foundation for our beliefs, psychology, and subsequently, our behavior.

During the quarantine, many people found themselves in close quarters with just a few people, often family, and there was a significant period of adjustment and anxiety. The expectations of their daily lives changed, and things that were previously commonplace were called into question. For a period of time, there was no such thing as normal behavior as we all adjusted to the changes in the social dynamics and our means of survival.

A field investigation described by Auerbach, Hedva, Solfvin, and Williams (2023) involves a detailed investigation of poltergeist activity within a family in the Silicon Valley area of California, USA. Because personal visits were impossible, this investigation involved video conferences with family members where detailed descriptions of phenomena were gathered, but more importantly, a licensed clinical psychologist, Hedva, provided online counselling sessions for the family members to assist their understanding of the experiences and to help provide a method to reduce or eliminate the unwanted activity.

It seems likely that the experiences described as poltergeist type phenomena may not have manifested and likely would not have been noticed if there was no change in lifestyle due to the COVID-19 pandemic. When the activities of daily life were interrupted and patterns of behavior were broken, this family began to make new observation and form new patterns. It is during this stage of flux and variation that the activity began and was recognized by the family members.

A virtual field investigation of this type is unusual, but there were many unusual activities occurring during quarantine. This article provides a guide for future phenomena that cannot easily be investigated in person, but it also provides some wonderful insights into the type of virtual counseling that would be useful when encountering similar activities.

Update on the 21st Century Poltergeist

In the late Fall of 2013, the Rhine Research Center was contacted by a medical professional who was approached by a family about unusual activity surrounding their 11-year-old son. The family had compiled a list of 31 distinct events that seemed to indicate electrical disturbances or malfunctioning technologies around the young boy. The medical doctor did a complete examination of the boy and found nothing

physical that might indicate an illness or physical disorder, so he contacted the Rhine to determine if we would be able to help the young boy and his family to understand the phenomena.

In early 2014, William Joines and I began an investigation into the reported activity. During our visit to the family home, we noticed episodes of electronic poltergeist phenomena (EPD) including malfunctioning phones, a smoke alarm and appliances that were spontaneously triggered, computers that malfunctioned in his presence, and a printer that would behave erratically, but only when the young boy was trying to print a document. A full list of reported and observed phenomena is available in Kruth & Joines (2016).

The family and the young boy expressed a strong desire to eliminate the disturbances because they were both disruptive and expensive. Electronic devices were breaking and sometimes required extensive repairs if they could be repaired at all. Through consultations with psychologists, paranormal investigators, and a person who had previously had similar experiences, we designed an approach to reduce the destructive nature of the activity. The primary strategy was to provide the family with tools to recognize the types of activities that might trigger these events and to give them a way to reduce the disruptive impact of these activities on the young boy that seemed to be the agent of the activity.

The family was introduced to some simple relaxation techniques that included breathing exercises and visualizations to induce a calm and quiet mind. The young boy was also taught to become mindful of his feelings and the thoughts might trigger the electrical disturbances. Through a combination of mindfulness and relaxation, the young boy quickly learned to control his emotions and reduce his anxiety by focusing and visualizing a calm environment.

Within a few days, the electrical disturbances stopped, and the family was relieved. Unfortunately, about two months later a change in the family dynamic introduced new stresses into their lives, and for about 10 days the disturbances returned, accompanied by very loud banging noises and knocking. After once again applying the relaxation techniques, the disturbances began to subside, and when the family crisis was resolved, the events stopped once again.

Recent update

In May of 2023, nine years after the initial investigation began, I contacted the family to get an update on the status of the young boy and the events that had been so disruptive in the past. The young boy's grandmother described the boy as an intelligent and well-adjusted young man who was attending college to study meteorology. Since our initial investigation, there were no further reports of electrical disturbances, and he regularly uses technology and complex electronics in his studies.

He is a very religious and ethical young man who does a great deal of volunteer work in the local community. His chosen area of study creates opportunities for travel, and though he had been raised in a rural area, he thrives in a city environment. Besides his community work, his social life has been rather limited due to his passion for meteorology and his involvement in events related to his passion.

Despite the typical pressures that come with teenage years and young adulthood, he has never

reported any further electronic disturbances. In fact, while speaking with his grandmother, she counted 4 computers in the house that are the tools that he uses to monitor the weather and make forecasts of future weather events. Apparently, he has overcome any problems that were previously activating issues with electronic devices, and if he was the poltergeist agent 9 years ago, he is now able to control these events.

Evolution of Poltergeist Investigations

Our explorations of poltergeist activities have evolved over the years from the loose, journalistic style described in the book *The Elusive Force* (review by Kruth, 2023), to the predominance of electrical phenomena (Kruth & Joines, 2016), to a modern, virtual field investigation (Auerbach, et. al., 2023). I am encouraged by the evolution towards investigations that put people first rather than isolating the unusual activity as the primary focus of the investigation. Unexplainable events can induce anguish and confusion, and it is the responsibility of a compassionate parapsychologist to first address the needs of the experiencers while maintaining a clear vision of the phenomena under investigation. Our ethics as investigators define our approach, and more modern field investigations must recognize the impact that these events and the subsequent investigation has on the experiencers so that we may better serve them.

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A Tribute to Diane Corcoran (7/20/1946 – 3/5/2023)

Robert Mays

International Association of Near-Death Studies

Over the years it has become clear to me that our destinies – our life plans – lead us to *crucial encounters* with others, which then steers our lives in certain directions. Indeed, *everyone* has these encounters that guide their destinies.

Reflecting on Diane Corcoran's life, we get a sense of the threads of her destiny that were laid out before she was born in 1946.

As an Army nurse serving in Vietnam in 1969, Diane had one of these destined encounters while caring for a wounded American soldier. He said to her, "I need to tell you something, but you have to promise that you'll believe me; you have to believe me." Diane agreed and the soldier told her that, when he was wounded, he rose out of his body and went to a heavenly place where he saw departed loved ones and deceased comrades. He said it was the most real thing he had ever experienced.

The soldier was describing a near-death experience (NDE), but at that time there was no name for it.

Diane was not alone encountering a near-death experiencer (NDER). Around the same time, in 1964, philosophy undergraduate Raymond Moody met NDER George Ritchie who told a story of his profound out-of-body encounter with the Being of Light whom he claimed was Christ. In 1971, intern psychiatrist Bruce Greyson encountered Holly – a suicide attempter – who related accurate, veridical perceptions while she was out-of-body during her coma.

At the time, neither Diane, Raymond, or Bruce knew what to make of these experiences. However, they would not be merely "chance" encounters, instead they set a life direction for each person. Raymond and Bruce pursued pioneering research on NDEs and were among the founders of the International Association for Near-Death Studies (IANDS).

Diane remained in the military, rising to the rank of Colonel, and devoted her life to NDE education and advocacy especially among active-duty military and veterans. She established education programs for military nurses, doctors, psychiatrists, and chaplains, promoting the message that NDEs are normal occurrences that should not be pathologized or stigmatized.

One of Diane's most enduring accomplishments was championing the funding and production of the IANDS medical training video "NDEs: What Medical Professionals Need to Know" and especially the veterans' video, "Understanding Veterans' Near-Death Experiences."

Diane served on the IANDS Board of Directors for many years and as president for a total of 12 years, the longest term in IANDS's 42-year history. In 2008, she became president for the second time when several missteps led to a financial crisis that threatened the organization. IANDS could easily have folded but over three months, she moved the IANDS office from Connecticut to Durham, hired new staff, and instituted a fundraising campaign called "Light the Way," which, stabilized IANDS financially for three more years.

I was privileged to serve as IANDS Treasurer during this time and for many subsequent years. Diane was a no-nonsense, take-charge woman who led with authority, clarity, and compassion. Over the following years, IANDS grew and flourished under her guidance and direction.

She was also a guardian angel to many, many people whom she took under her wing—in particular Pat Fenske, a former IANDS president and a leader of Spiritual Frontiers Fellowship in Philadelphia. In 2012, Pat and her husband Paul's health was declining and they could no longer take care of themselves. Diane moved them down to Durham, set them up in an assisted care facility, and took care of their needs until their final days.

Under Diane's leadership, IANDS grew strong and the worldwide NDE movement likewise benefited.

Diane certainly followed her destiny—her life plan— triggered by that initial encounter with the wounded soldier in 1969.

Many near-death experiencers, during the review of their life, are told how important it is to show kindness, care, and compassion to others. It's much more important than any worldly accomplishments. However, Diane certainly excelled at both.

Indeed, the angels are rejoicing that she has finally returned to her True Home.

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Understanding Veterans' Near-Death Experiences: <https://youtu.be/iCwehw0XBFg>
Running Head: ENCHANTED PSI

Preregistered Field Test of an ‘Enchantment–Psi’ Loop

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Abstract: Previous survey evidence suggests that situational-enchantment is a mental state conducive for psi-related experiences. In this conceptual replication and exploration, we used a preregistered research design to examine hit rate on a mobile application (‘app’) test of putative psi that was administered after participant exposure to two competing conditions in counterbalanced order: (a) an ‘enchanted’ immersive tour in a ‘haunted’ house museum versus (b) a ‘disenchanted’ outdoor tent session with a video that allegedly debunked the paranormal. A convenience sample of 31 volunteers recruited via social media completed counter-balanced testing in both conditions and measures of transliminality and paranormal belief, which we converted to high and low (median split) measurements as co-variates of the hit rates on the psi test. Findings showed that high levels of both transliminality and paranormal belief, as well as the ‘haunted (enchanted)’ versus ‘skeptical (disenchanted)’ conditions significantly shifted overall hit rates and above-chance performance. In the majority of analyses these effects represented more than a 10% shift in both hit rate and tests against average psi guessing rate. We discuss these results as supporting an interactionist (environment–person) model of certain parapsychological phenomena.

Keywords: enchantment, immersive experiences, liminality, paranormal belief, psychic opening

The Psychic Opening Hypothesis contends that psi-related perceptions or abilities often stem from periods of biopsychosocial confusion, tension, or crisis (e.g., Greyson, 1983; Storm & Goretzki, 2020, 2021; Taylor, 2012b; Taylor, & Egeto-Szabo, 2017). An underlying mechanism to possibly clarify this relationship is that ‘dis-ease’ episodes — i.e., when one’s normal state of ‘ease’ becomes markedly disrupted or imbalanced — often promote ‘thin’ mental boundary functioning, which subsequently fosters anomalous, altered, or otherwise exceptional human experiences (Cardeña et al., 2014, 2015; Evans et al., 2019; Lange et al., 2019; Laythe et al., 2018). To be sure, literature reviews indicate that the perceptual-personality characteristics of transliminality (TLIM) and paranormal belief (PB) both consistently correlate with each other and indices of putative psi (Thalbourne & Houran, 2003; Thalbourne & Storm, 2012; Ventola et al., 2019). The mutually-reinforcing nature of these two psychological constructs thus arguably supports the

Jungian Trickster¹ view in that many types of mystical or parapsychological phenomena tend to occur in liminal contexts that situate people 'betwixt and between' reality and fantasy (for a discussion, see Drinkwater et al., 2019; Hansen, 2001; McClenon, 2019).

However, TLIM (Evans et al., 2019) and PB (Irwin et al., 2018) also seem to function partly as *state* variables. This implies that mental boundaries and attitudes to the paranormal can increase or decrease in accordance with biopsychosocial or environmental influences, thereby underscoring a systems theory approach to anomalous experience (e.g., Evans et al., 2019; Ironside & Wooffitt, 2022; Laythe et al., 2021a; Maraldi & Krippner, 2013). Indeed, our own work has found that psi effects manifest most robustly when experimental settings actively promote TLIM and PB (Houran et al., 2002; Houran & Lange, 2012; Lange & Houran, 2013), i.e., conditions involving thinner mental boundaries and lower psychological defenses. Some independent studies have likewise pointed to similar interactionist effects on psi outcomes (e.g., Simmonds-Moore & Holt, 2007). More recent research further suggests that both perceptual variables, and by extension psi, are also bolstered by situational-enchantment. This term denotes a complex arousal state involving absorption within a melee of 'pleasant' ideations and emotions (e.g., excitement, surprise, awe, and wonder), simultaneously mixed with more 'unpleasant' ideations and emotions (e.g., uneasiness, disorientation, tension, and unpredictability). This happens when a 'person—environment' interaction disrupts an individual's normal waking experience with a sudden, unexpected, or profound awareness that seeds a transformative feeling of connection to a 'supreme agency or ultimate reality.' We compare the behavioral result to a deep sense of shock or surrealism, but interested readers are referred to Lange and Houran (2021) and Drinkwater et al. (2022) for detailed discussions of the development of this construct and its relationship to transpersonal psychology and potential psi.

Enchantment is a normal part of the human condition and emerges when science or practical knowledge have little utility (Bennett, 2001). It can thus be invoked in many scenarios, such as delighting in art, experiencing nature, or participating in other kinds of immersive experiences that markedly alter people's perceptions or notions of reality (e.g., Anderson, Monroy, & Keltner, 2018; Hunter, 2018; Jones, 2008; Lamont, 2017; Lange, Houran, & Moran, 2022; Lange, Houran, & Tracey, 2022; Taylor, 2012a; van Elk et al., 2016). Moreover, Lange and Houran (2021) used path analysis on a large sample of online survey data to show that enchantment was a special mental state conducive for psi-related experiences. After establishing the reliability and scalability of all measures via Rasch (1960/1980) scaling, their respondents were randomly assigned to either a Training set ($n = 471$) or Validation set ($n = 236$). Competitive testing with path analysis on the Training set found that the best-fitting model affirmed a self-reinforcing loop between Enchantment and Exceptional Human Experiences (EHEs, i.e., implicit psi), which was mediated by a link between Transliminality and Paranormal Belief (i.e., New Age Philosophy, cf. Lange, Irwin, & Houran, 2000). Specifically, Transliminality and PB fostered EHEs (psi) which induced Enchantment, which

¹ The Trickster — i.e., a "deceiver, liar, or trouble-maker" who crosses and often breaks both physical and societal rules — is a major figure in Carl Jung's archetypal framework. Jung's (1956, 1969; Jung & von Franz, 1964) explanation for the various psychological archetypes that seemingly surface consistently throughout religious and cultural literature around the world is that they derive from what he called the 'collective unconscious' or an inherited and thus universal psychic 'layer' that contains all of the knowledge and experiences humans share as a species. Recent revelations about Jung's work, particularly the Red Book (Jung, 2012) clearly establish his theoretical framework within the history and influence of Kabbalah, a root form of Jewish mysticism instrumental in many western mystery traditions. Thus, Trickster Theory should be understood as a concept historically influenced by magical practice, mysticism, and paranormal experience. But we must note that there are also scathing reviews of Jungian dogma (Crews, 1998; Simón, 2020), as well as some studies which have induced confusions between reality and imagination yet did not find evidence of psi (see e.g., Blackmore & Rose, 1997; Rose & Blackmore, 2001).

then promoted more Transliminality and PB. This same pattern was fully replicated with excellent model fit in the Validation set. These results strongly support the hypothesis that the state of enchantment can promote putative 'psychic openings.'

The Present Study

This hybrid confirmatory and exploratory research uses a naturalistic setting and real-time experiences to conceptually replicate Lange and Houran's (2021) finding of an 'enchantment-psi' loop. On this point, some authors explain the popularity of paranormal tourism and its related activities in terms of stoking enchantment in people (Holloway, 2010; Ironside, 2018; Schneider, 1993). Both qualitative and quantitative analyses of visitors' experiences strongly support this idea (e.g., Houran et al., 2020, 2022a; Pharino, Pearce, & Pryce, 2018) and underscore the effectiveness of using these immersive-type excursions to test ideas about the formation and maintenance of paranormal beliefs and anomalous experiences (cf. Cocchiarella & Drinkwater, 2019; Langston & Hubbard, 2019; Wiseman et al., 2003). For instance, Houran et al. (2022a) studied people's accounts of commercial ghost tours and found that nearly 50% of the attendees reported having at least one anomalous experience. Moreover, 73% of these percipients also described feeling "somewhat or very" enchanted by their anomalous experiences.

Paranormal tourism can apparently thus produce a juxtaposition of 'normal' reality and the awareness of an additional 'paranormal' element, thus creating a sense of awe and encouraging openness to alternative ways of thinking. We likewise hypothesized that experimental psi outcomes will be significantly influenced by the combination of 'Paranormal Belief × Transliminality × Situational-Enchantment.' Hit rates on a test of putative psi that is administered during an 'enchanted' condition (i.e., an immersive paranormal tour) are therefore expected to be significantly higher than those associated with a 'disenchanted' condition (i.e., an arduous video presentation that purportedly debunks the paranormal), especially relative to questionnaire levels of PB and TLIM. The Method section details our planned analyses and power analysis, but we note that supposed gender differences in TLIM or PB have not been validated when using bias-free measures of these constructs (Lange, Irwin, et al., 2000; Lange, Thalbourne et al., 2000) and so we did not consider any such effects in this study.

Method

Preliminaries

This research follows a protocol preregistered with the Koestler Parapsychology Unit at Edinburgh University on 12 April 2022: KPU Registry ID Number: 1068 (http://www.koestler-parapsychology.psy.ed.ac.uk/Documents/KPU_Registry_1068.pdf). However, logistical and technological challenges required some modifications to our actual procedures. Nosek et al. (2018) noted that such changes are not preferable but do not necessarily nullify preregistered studies. The key is to transparently report the reasons for modifications and their practical consequences. As is shown below, participants agreed to fill out several preliminary measures, register for a specified group tour time, and subsequently travel, in many instances, for over an hour to partake in an approximately three-hour process at a location that was unfamiliar to most of the participants.

As a result, the volunteers committed to the process but also likely approached the point of non-compliance given the degree of required effort. We thus note that the present study (a) involved a substantially lower sample size than originally planned ($n = 60-80$), due to large degrees of attrition after the initial measures were assigned and the actual experiment (see Participants and Procedure subsections); (b) omitted planned administration and analyses of the Enchantment Adjective Checklist² (Houran et al., 2022a) to save time, minimize survey fatigue, and maintain participation across experimental conditions; (c) used an outdoor tent-area at the test site versus an indoor ‘laboratory’ setting in order to simplify the logistics of the proceedings for the volunteers; and (d) waived, in this report, some planned secondary and exploratory analyses involving comparison of psi-app condition scores from initial trials assigned, the possible effect of visualization training (if any) on participants’ psi scores, and theoretical changes in time-logged environmental data collected with the *multi-event sensor application* (MESA 3.0: Laythe et al., 2021b) during Condition A as a co-variate to participants’ anomalous experiences (cf. Laythe & Houran, 2019).

Participants

Participants were recruited via open-sharing in groups within the Facebook social media platform and registered at IsraelNet.org, whereby a specific page contained instructions, informed consent materials, and required participants to schedule their time for a “haunted tour adventure.” A convenience sample of 96 individuals registered, but attrition was substantial for reasons unknown. Data thus derived from a total of 31 participants, comprising 12 men and 19 women ($M_{\text{age}} = 44$ yrs., $SD = 15$, range = 18 to 69 yrs). All but one of the participants self-identified as Caucasian.

Measures

We utilized three published measures and a study-specific test of putative psi:

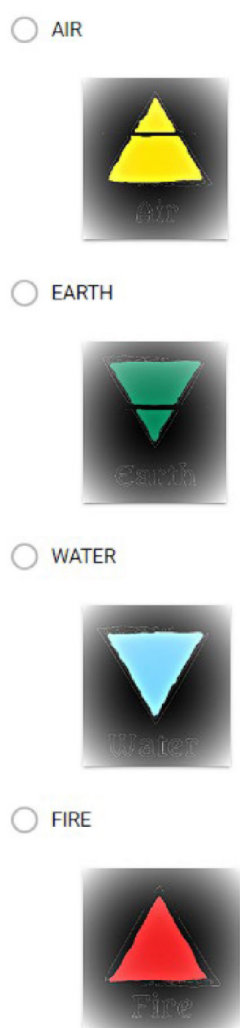
1. The 16-item, Rasch-scaled version (Lange, Irwin, et al., 2000) of the *Revised Paranormal Belief Scale* (RPBS: Tobacyk, 1988, 2004) remedies the original 26-item, Likert-based form with its artificial structure of seven factors due to differential item functioning, i.e., sex and age response biases. Correcting these measurement problems, Lange, Irwin et al. (2000) showed that the RPBS comprises only two, moderately correlated belief subscales that seemingly reflect different issues of control.
2. Specifically, ‘New Age Philosophy’ (11 items, Rasch reliability = .90) appears related to a greater sense of control over interpersonal and external events (e.g., belief in psi), whereas ‘Traditional Paranormal Beliefs’ (5 items, Rasch reliability = .74) seem more culturally-transmitted and beneficial in maintaining social control via a belief in magic, determinism, and a mechanistic view of the world. The Rasch-RPBS has a *mean* of 25 ($SD = 5$) for both subscales and several studies support their construct validities (Houran, Thalbourne, & Ashe, 2000; Houran & Lange, 2001; Houran, Irwin, & Lange, 2001).
3. *Revised Transliminality Scale* (RTS: Lange, Thalbourne et al., 2000) is a 17-item, T/F, Rasch-scaled measure of “hypersensitivity to psychological material originating in (a) the unconscious, and/or (b) the external environment” (Thalbourne & Maltby, 2008, p. 1618). Thus, this perceptual-personality variable parallels Hartmann’s (1991) boundary construct and also the notion of sensory processing

² This is a 21-item (T/F), Rasch-scaled measure ($M = 50$, $SD = 15$) of the five themes that define experiences of situational-enchantment: (a) Emotional, (b) Sensorial, (c) Timeless, (d) Rational, and (e) Transformative. Houran et al. (2022a) found that scores show good internal reliability (Rasch reliability = 0.82) and a positive correlation with people’s global ratings of perceived enchantment ($r = 0.51$, $p < .001$).

sensitivity (Aron & Aron, 1997). The Rasch reliability is .82, and RTS scores ($M = 25$, $SD = 5$) consistently predict different syncretic cognitions and lower psychophysiological thresholds (for reviews, see Evans et al., 2019; Lange et al., 2019).

4. *Mobile Test of Putative Psi* (Laythe & Roberts, 2022). This psi-application (or 'app') was designed specifically for this study by the second author in a Google Form using natural randomization and blind-logic switch features. It can be characterized as a double randomized card draw from four possible choices, which involve the traditional esoteric four-elemental symbols (i.e., Earth, Air, Fire, & Water). The app also draws on Tart's (1976) learning theory approach by ostensibly training participants to associate certain images and feelings with the elemental symbols that serve as target stimuli in the experimental trials. These symbols have been used throughout history and across

religions for hundreds of years, and thus are arguably embedded in mainstream consciousness (for a discussion, see e.g., Tountas, 2009). However, our protocol differs from the classic Zener card format in several ways. First, the user selects each trial from a set of four unmarked trial options. In each case the order of presentation is randomized. Thus, the user blindly selects one of four trials, each of which contains a different random, computer-selected target. This will serve as an unconscious measure of trial selection, where probability would dictate over several trial sessions that p (any targeted element) should approximate 0.25 in terms of the computer-selected psi target. Figure 1 shows a sample screenshot of a four element selection process of one trial.



This selection process ensures that there is no overlapping selection of a trial, as each selection of a trial is selected from four trials independent of the other trial selections. Second, it blindly allows the sum of six target selections to represent a random presentation of the psi target elements. As such, a participant can blindly select a set of six trials that may contain a balance of psi target elements (all four elements equally represented, taking into account six trials), or a noted increase in psi targets in one or more particular elements (e.g., four blindly selected psi targets two of which are fire, and two are water). This set selection technique provides two principal benefits. First, it ensures that the psi target representation is truly varied and random, representing all permutations (with replacement) of lesser or greater amounts of individual elemental targets. This in turn makes it difficult to predict any form of a reliable pattern of what the psi target is. Figure 2 provides a flow table to highlight the independent trial selection process of the participant.

Fig. 1 Individual Psi-App Trial Example
Note: Reproduced with permission from Laythe and Roberts (2022)

Through the above process, participants cycle through six independent trials of overt psi, where the task is to correctly guess which of the four elements (in the trial that participants blindly selected), was the target. The psi-app test was designed to be optimized for mobile devices and thus enabled for easy use on smartphones or tablets. We should mention that other researchers have likewise endorsed and used this methodological approach

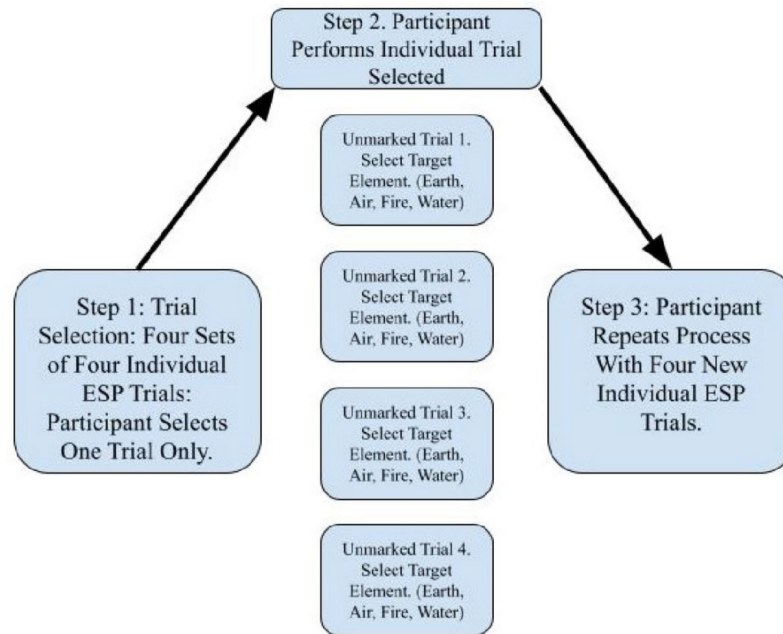


Fig. 2 Flow Diagram of Trial Selection and Individual Trial Completion Process
 Note: Reproduced with permission from Laythe and Roberts (2022)

to psi-testing (e.g., Curry, 2016; Mossbridge & Radin, 2021). To both investigate and control mood and environmental factors, several initial questions are asked pre-trial. These include the participant's *specific location*, and four 4-point forced-choice Likert questions that assess *mood* (e.g., "I am feeling anxious or stressed" and "I am feeling happy") and *environmental distraction* (e.g., "It is noisy or crowded where I am taking my test" and "I feel that I can concentrate"). Notably, Google Forms automatically timestamps survey entries, and with participant-provided location latency between tests, locations can automatically be coded.

Once selecting their trial, participants are next instructed as follows: "Using your instinct or intuition, please select which symbol below that you think the computer has secretly selected as the 'target'?" That is, participants are asked to use their base intuition or gut feelings to attempt to select the target element. Notably, the psi-app test, as currently designed, only administers six trials per session, thus analyzing responses at the individual participant level will require at least two separate sessions, noting the typically small effect sizes for psi. However, it is expected that participants will contribute multiple trials over a course of time, noting environment, mood, concentration, implicit trial selection based on elemental affinity, and success in actual trials for each psi-app series.

Procedure

Participants first completed online versions of the RTS, Rasch-RPBS, and standard demographic questions. We also asked them to perform (a) two baseline psi-app sessions (of six trials each) and (b) two training psi-app sessions before participating in Phase II of the experiment. Once participants completed the initial psychometric measures and training on the psi-app, they were assigned to one of two separate serial experimental conditions as a function of the day they registered (either Saturday or Sunday). The Saturday participants were exposed to Condition A followed by Condition B, whereas the Sunday participants had the reverse order:

5. *Condition A* had participants experience an 'enchanted' immersive paranormal tour at an indoor test site ('The Whispers Estate' historic house museum), which is known for both subjective and objective anomalous phenomena (Laythe & Houran, 2019). A tour conductor who was familiar with the site (but experimentally blind to our hypotheses) facilitated the sessions. The walking tour lasted approximately one-hour and highlighted the history, folklore, and scientific research associated with the site. After the tour, participants completed two sessions of six trials on the psi-app.
6. *Condition B* had participants visit a 'disenchanted' tent space that was purposely stripped of decoration and situated in the rustic backyard of the test site. A facilitator (experimentally blind to our hypotheses) showed the group the first 20 minutes of a lengthy video that aimed to debunk paranormal phenomena. This presentation is publicly available on YouTube and features prominent skeptic James Randi (see: shorturl.at/cdgBV). The dull environmental setting combined with the seating arrangement of the participants and dismissive video presentation were intended to curtail the participants' sense of enchantment. Afterwards, the facilitator asked the participants to complete two sessions of six trials on the psi-app. The overall duration of this entire session was about 40 minutes.

Hypotheses and Power Analysis

Consistent with the hypothesis of an 'enchantment-psi' loop, we predicted that Condition A ('haunted/enchanted') would show higher hit rates on the psi-app than Condition B ('skeptical/disenchanted'). Further, we expected that higher or lower levels of PB and TLIM (using a standard median split of our Rasch measures) would make participants more or less susceptible to both environmental conditions (and subsequent psi performance). Our initial aim for this study was to test observable shifts in psi performance regarding the variables above. However, we also conducted analyses that explored for significant psi performance in Conditions A vs B relative to chance expectations. In all cases, our power analysis performed in the pre-registration —where $p = .80$, $\beta = .20$, and $\alpha = .05$ for detecting a 3% change in means— recommends 16 participants per group for *means testing* with independent samples. The calculations reported here are based on samples that exceed this threshold, as 31 participants fully engaged in this study and completed pre-registration along with the subsequent psi testing across Conditions A and B.

Results

Hit Rate Shifts Relative to Environmental Condition, Transliminality, and Paranormal Belief

First, assuming that correct guessing on the psi-app theoretically should be affected neither by environmental 'enchantment' conditions nor the variables of Transliminality or Paranormal Belief, an analysis of correct response rates were analyzed with the use of chi-squares whereby enchantment condition (haunted location vs skeptical video) was further divided into either low/high TLIM, low/high TPB, or low/high NAP, which resulted in three 2×2 chi-square designs. To clarify, the following analysis represents a proportion test of correct psi hits, in relation to the above conditions, representing an omnibus test of whether or not conditions and perceptual-personality factors themselves produce significantly different psi scores, regardless of at-, above-, or below- chance outcomes on the psi-app.

Table 1.

Hit Rates on the Psi Test By Environmental Condition, Transliminality, and Paranormal Belief (NAP = New Age Philosophy vs. TPB = Traditional Paranormal Beliefs)

Condition by Transliminality			
<i>Main Analysis</i>		<i>Haunt Condition</i>	<i>Skeptical Condition</i>
Transliminality Low	Observed	30	41
	Expected	29	37
Transliminality High	Observed	62	49
	Expected	59	51
Chi Square	χ^2	0.694	$p = .40$

Condition by Traditional Paranormal Beliefs			
<i>Main Analysis</i>		<i>Haunt Condition</i>	<i>Skeptical Condition</i>
TPB Low	Observed	47	58
	Expected	50	53
TPB High	Observed	45	32
	Expected	38	36
Chi Square	χ^2	2.29	$p = .13$

Condition by New Age Philosophy Beliefs			
<i>Main Analysis</i>		<i>Haunt Condition</i>	<i>Skeptical Condition</i>
NAP Low	Observed	34	38
	Expected	37	36
NAP High	Observed	58	52
	Expected	52	53
Chi Square	χ^2	1.05	$p = .30$

Table 1 shows the results, and we encourage readers to note particularly the differences between observed and expected hit rates. Regarding high and low TLIM in relation to our Haunted and Skeptical conditions, the overall 2×2 chi-square was significant ($\chi^2 = 0.69, p = .40$), noting no more than a four count difference in observed versus expected counts in any of the cell conditions. For TPB, differences in counts were more pronounced, and the overall chi-square approached significance ($\chi^2 = 2.29, p = .13$). Notably, the high TPB scoring participants in the Haunted condition showed seven counts above chance ($O = 45$ vs $E = 38$), an 18% increase from the expected count, whereas low TPB in the Skeptical condition ($O = 58$ vs $E = 53$) showed a 9% increase from the expected count. The other two conditions showed no greater than a four-count variation from the expected. While the above omnibus test is not statistically significant, we note a pattern here that shows larger count differences in congruent environments (i.e., high TPB in the Haunted environment, and low TPB in the Skeptical environment), while lesser differences occur in incongruent environments. However, when examining NAP beliefs, the overall chi-square is again not significant ($\chi^2 = 1.05, p = .30$), with the only notable shift in scoring remains in the Haunted condition with high NAP, similar to TPB above. In the former condition observed scores show an 11.5% increase in observed scores ($O = 58$ vs $E = 52$). All other cells show no more than three counts from the expected.

In sum, the above omnibus tests across four conditions are non-significant because shifts in scoring are, in bulk, only occurring in either two or one of the individual cells (i.e., mandating a large effect shift in one cell required to carry the other three cells for the overall omnibus test). The overall pattern shows individual shifts in observed counts consistently appear to be a fit to the environment, i.e., high NAP and TPB seem to facilitate better than expected psi outcomes in the Haunted condition compared to the Skeptical condition, and vice versa for low NAP and TPB.

Putative Psi Relative to Environmental Condition, Transliminality and Paranormal Beliefs.

Our exploratory analyses of the psi levels in this study have important stipulations. Note that the raw number of psi trials was not constant across participants due to participant error, a glitch in the logic switch in the psi-app, and the number of sessions conducted. Thus, in some instances, participants completed a number of overall trials that did not evenly divide by four (noting a .25 random correct guessing rate for each trial). This means that there were instances where the expected percentage was a ratio (i.e., 14 completed trials equal an expected hit rate of 3.5), which would artificially inflate the power of the person's correct number of responses since, in all cases, a correct guess would always be a number without a fraction. In the above instance, if the participant correctly guessed 4/14 testing against an inflated $3\frac{1}{2}$ grants an 'imaginary' fractional percentage (due to the division of a series of hits or misses which do not allow partial responses) in favor of testing for positive psi response. To adjust for this, we simply rounded the sum of the expected hits up to the nearest whole number, which is precise when testing aggregate ratios, and limits a greater degree of inaccuracy in the final expected count by rounding any score upwards for each individual participant.

Table 2.

Psi Significance Tests by Environmental Condition, Transliminality, and Paranormal Belief (NAP = New Age Philosophy vs. TPB = Traditional Paranormal Beliefs)

<i>Condition</i>	<i>Trials</i>	<i>Hits (O)</i>	<i>Expected</i>	<i>% Change E</i>	<i>Binomial P</i>
Pre					
NAP LOW	74	19	21	-0.03	0.36
NAP HIGH	197	51	50	0.01	0.45
Haunt					
NAP LOW	145	34	37	-0.02	0.32
NAP HIGH	206	58	52	0.03	0.18
Skeptic					
NAP LOW	141	38	36	0.01	0.38
NAP HIGH	210	52	53	0.00	0.47
<hr/>					
<i>Condition</i>	<i>Trials</i>	<i>Hits (O)</i>	<i>Expected</i>	<i>% Change E</i>	<i>Binomial P</i>
Pre					
TPB LOW	186	49	47	0.01	0.38
TPB HIGH	118	27	30	-0.03	0.55
Haunt					
TPB LOW	199	47	50	-0.02	0.35
TPB HIGH	152	45	38	0.05	0.11
Skeptic					
TPB LOW	209	58	53	0.02	0.23
TPB HIGH	142	32	36	-0.03	0.26

<i>Condition</i>	<i>Trials</i>	<i>Hits (O)</i>	<i>Expected</i>	<i>% Change E</i>	<i>Binomial P</i>
Pre					
TLIM LOW	109	26	28	-0.02	0.39
TLIM HIGH	195	50	49	0.01	0.46
Haunt					
TLIM LOW	116	30	29	0.01	0.45
TLIM HIGH	235	62	59	0.01	0.35
Skeptic					
TLIM LOW	148	41	37	0.03	0.25
TLIM HIGH	203	49	51	-0.01	0.41

<i>Condition</i>	<i>Trials</i>	<i>Hits (O)</i>	<i>Expected</i>	<i>% Change E</i>	<i>Binomial P</i>
Pre					
ALL LOW	26	5	7	-0.08	0.26
ALL HIGH	97	23	25	-0.02	0.37
Haunt					
ALL LOW	33	11	9	0.06	0.26
ALL HIGH	123	40	31	0.07	0.04
Skeptic					
ALL LOW	47	12	12	0.00	0.52
ALL HIGH	109	24	28	-0.04	0.23

Chi-squares do not allow '0's as a final response, so we analyzed observed versus expected ratios with binomial probability analysis in order to test for significant positive hit rates on the psi-app. Specifically, we examined significant hit rates by pre-experiment scores, as well as the Haunted and Skeptical conditions, again separating participant samples with high and low TLIM, TPB, and NAP. We further note that our alpha was set at .025 to represent two-tailed binomial tests but emphasize to readers the examination of differences between conditions in terms of effect size. Finally, we used a smaller sample to compare only participants high or low on all three measures above (i.e., high TLIM and PB versus low TLIM and PB) for the Pre-Experiment, Haunted, and Skeptical conditions (see Table 2).

Regarding high and low TLIM within the Pre-experiment, Haunted, and Skeptical conditions, all hit rates represent less than a 3% shift from expected hit rates and are non-significant in all conditions (p 's = .25 to .46, *ns*), indicating a lack of psi-hitting (or what might be 'psi-missing') which falls near expected chance. In contrast, when examining TPBs we see that high scorers in the Haunted condition showed an overall 5% shift in a positive direction from expected rates ($O = 45$ vs $E = 38$, $p = .11$). Whereas more variation in observed counts occur in the other conditions, the remainder of the conditions show smaller variation, and are non-significant (p 's = .23 to .55, *ns*). With respect to low and high NAP beliefs, two areas show interesting deviations from expected. First, and similar to the above with TPB, there is a 3% shift from expected, counts in the high NAP/ Haunted condition ($O = 52$ vs $E = 58$, $p = .18$), a non-significant finding but mirroring the trend with TPBs above.

In sum, and with full recognition that statistical significance is lacking in the above findings, there remains an overall observable pattern whereby participants with high NAP and TPB seemingly perform better on the psi tasks that were administered during the Haunted condition. Further to this point, we performed an additional post-hoc analysis in which we isolated only participants who collectively scored high and low on TLIM, NAP, and TPB. Despite the smaller sample size and participant number, we find a statistically significant psi effect in the Haunted condition for high scorers across all three measures ($O = 40$ vs $E = 31$, $p = .04$) and which involves an overall shift in the scoring of 7% above chance. As before, the remainder of the conditions are non-significant.

Methodological Limitations and Considerations

Difficulties with implementing the preregistered design nonetheless provided insights for improving our procedures in future research. Most critically, researchers must manage participant attrition in field-based sessions or experiments. Some of our registered volunteers might have decided against participating because we scheduled sessions on a weekend or that the test site was located in a remote, rural area. Others perhaps reneged due to a fear of 'ghosts' and thus feeling vulnerable during the proceedings (cf. Silva & Woody, 2022). However, we now question whether our lower sample size was as much of a limiting factor as it appears. Statistical power is certainly reduced by fewer data (Button et al., 2013), but it could be that the smaller test groups actually helped to accentuate the effects of the immersive 'haunted' condition, and by extension, putative psi functioning. To be sure, some research suggests that perceptions of overcrowding undermine aesthetic or leisure experiences (e.g., Milman, Tasci, & Wei, 2020).

But aside from financial or related incentives (Resnik, 2015), one way to help counter attrition might be to screen-out participants with high scores on the State-Trait Anxiety Inventory (Spielberger et al., 1983) or the Fear of the Paranormal subscale of the Anomalous Experiences Inventory (Gallagher et al., 1994). Another promising tactic is the recommendation to recruit members of the global 'ghost-hunter' community to act as citizen scientists (Hill et al., 2019; Laythe et al., 2021b, 2022), i.e., non-professional researchers who actively participate in academic studies to help generate new knowledge and information (Ceccaroni & Piera, 2017). Advantages of this approach include the easy access to good numbers of highly curious and motivated individuals who usually have experience in field settings that require anxiety or fear control (Laythe et al., 2022). Thus, the advent of user-friendly training and protocols should enable scientists to readily conduct psi testing at sacred or haunted spaces via casual visits or organized investi-

gations by these paranormal enthusiasts. In exchange, parapsychologists have the opportunity to mentor and educate self-styled investigators on the use of scientific methods and standardized procedures (for a discussion, see Houran et al., 2022b: Appendix).

A final methodological point deserves comment. 'Haunted' house museums and other forms of paranormal tourism are convenient platforms for fieldwork studies of altered-anomalous experiences and ostensible psi (Houran et al., 2020), but other types of sacred spaces or settings could be used to replicate or extend our findings. For instance, there are a multitude of special heritage or natural history sites around the world that are potentially suitable for environmental studies of exceptional human experiences (e.g., Jackson & Ormsby, 2017; National Geographic Editors, 2022; Puhle & Parker, 2021; Stone, 2021; Zhang et al., 2022). And too, there is the 'space syntax' inherent to ritual settings (e.g., Franchetto, 2020), mirror-gazing environments (e.g., Caputo, Lynn, & Houran, 2021), and psychedelic sessions (e.g., Luke, 2022). We also dare to speculate that purely augmented or virtual reality settings might prove as effective as 'real' ones (see e.g., Riva et al., 2016). Leveraging a broad array of research locations or conditions should produce data that enrich the empirical literature. Particularly, a ripe area for study is whether certain physical characteristics of a conventional nature reliably define natural and built environments that are deemed as 'sacred or haunted.' Researchers have often pondered this question (Bermudez, 2015; Dagnall et al., 2020; Jawer et al., 2020; McAndrew, 2020; Stroik, 2018), but we have launched empirical explorations along these lines (e.g., Houran et al., 2023; Laythe et al., 2021b) and intend to publish the findings as available.

Discussion

Although uncontrollable confounds required some modifications to our preregistered design, this study nonetheless confirmed predictions from Lange and Houran's (2021) empirical model of an 'enchantment-psi' loop. In particular, our data showed that environmental conditions consistent with the 'Paranormal Belief \times Transliminality \times Situational-Enchantment' formula coincided with significant shifts in hit rates on a test of putative psi. It might not be enough therefore to test for psi using people with higher trait levels of TLIM or PB. Rather, positive outcomes seem to be more likely when the testing environment itself blatantly stokes state effects of permeable mental boundaries. Our results thus support the idea that certain parapsychological experiences are an interactionist phenomenon, i.e., they reflect "the right people in the right settings" (Laythe et al., 2018, p. 210). Additionally, these outcomes might suggest that the popular concepts of 'haunted or sacred spaces' are better reframed as 'enchanted or uncanny geographies' because they specifically serve to disrupt people's notions of reality and their place in it. In fact, it could be that receptive visitors are impacted to the extent such spaces or settings are sufficiently imbued with a sense of character, presence, or purpose (Bermann, 1998; Franz, 2021; Lipman, 2014), which can play on people's memories or meanings through the channels of proprioception (e.g., Ironside & Wooffitt, 2022) or the 'long body' concept (e.g., Roll, 2008).

From a sociocultural perspective, our findings are historically and procedurally reminiscent of spirit summoning and magical practice. Following Radin's (2018) initial treatise on the similarities between 'magic' and parapsychological research, the current study lends credence to the importance of the sacred space or ritual environment plainly emphasized by many (if not all) of the Victorian grimoires (e.g., the *Grimorium Verum*, cf. Stratton-Kent, 2022) or much older manuscripts such as *Hygromanteia* (cf. Marathakis, 2017). A

quick perusal of these or related treatises will quickly demonstrate a detailed procedure of prayer, sacred instruments, perfumes and incense, and sigils and circles for spirit summoning, as well as extended orations to call forward certain ‘entities.’ Translated to modern parlance, a given location is groomed (spiritual or parapsychological influences aside) to create an explicitly cued space filled with objects, symbols, or practices that reinforces a particular parapsychological effect. It is not a wild exaggeration to assert that the only differences between this study and the above practices are that we took specific measurements with participants who were unwittingly led into a pre-prepared ritual space that was known for inducing haunt-type experiences. Nevertheless, the history of magical practice clearly suggests that our findings are novel in parapsychology but certainly not in the broader context of religion and the occult (see e.g., McClenon, 1994, 2002). We hope to eventually apply some of these insights to lab-based research and thus better balance environmental *control* with *liminality*, not unlike parapsychological approaches such as Ganzfeld experiments, hypnosis studies, or psychedelic sessions that use ritual elements to some degree.

Our interpretations are tempered by several limitations that should be addressed in future research. For example, we can only reasonably infer that most participants were suitably enchanted by the paranormal tour. A better approach is to verify this assumption by using Enchantment-ACL measurements to directly affirm ‘enchantment–psi’ effects (Houran et al., 2022a). Convergent validity of putative psi might also be useful in new experiments. In scientific measurement, this type of validity refers to the degree to which different tests ostensibly measure the same or similar constructs. Using mixed or multiple methods to study a phenomenon produces results that are more robust and compelling than single method studies (Morse, 2003). Accordingly, participants tested for psi relative to immersive ‘haunt’ experiences could also complete the Survey of Strange Events (Houran et al., 2019a, 2019b; cf. Houran et al. 2021) to document any subjective and objective anomalies perceived during paranormal tours.

Adding tasks to experimental sessions of course risks the respondents becoming fatigued or inattentive and thus unable to become absorbed and experience enchantment within the proceedings. Thus, our research design could be constructively tweaked by developing measurements for the state effects of boundary functioning or enchantment that do not require a preponderance of questionnaires. This also broaches the issue of equivalency of duration and mobility between the haunted versus skeptical testing conditions. The two sessions perhaps should have lasted exactly the same lengths of time, and the use of ‘walking’ in the haunted tour (i.e., the role of the entire body) differed from the ‘seating’ approach used in the debunking presentation. These are subtle factors that nevertheless could have contributed either to the state effects and/or the observed psi outcomes. Additional studies should explore the impact of these and other procedural variances. Lastly, more research is needed to refine our understanding of PB relative to the proposed ‘enchantment–psi’ loop, and especially clarifying why NAP and TPB forms of belief correlated differently to psi outcomes and the reasons for some effects being more direct than others.

Our study also did not examine potential order effects in psi performance, as the effort necessary to deduce *how* order effects occurred would be substantially greater than normally needed to establish *why* order effects occurred. Notably, the psi-app was designed so that familiarity with it is highly unlikely to change the outcomes. Participants are, after all, still guessing the correct targets regardless of their comfort with the technology. Thus, order effects would most likely derive from distraction, lack of focus, or other attention issues. They might even reflect psi-missing, as pilot studies with the psi-app suggested a positive association between participant focus and psi-hitting, see Laythe & Roberts, 2022). Contextual questions

embedded in the application can help future research to understand order effects if they are observed, but our lower sample size prohibits any such robust analyses here.

That said, our findings contribute to mounting evidence that arguably informs the Psychic Opening Hypothesis (cf. Lange & Houran, 2021; Storm & Goretzki, 2021; Taylor, & Egeto-Szabo, 2017) and points the way toward 'environmental parapsychology' as a propitious line of research. Specifically, psychophysical stress *per se* might not be a prerequisite for psi functioning. The catalyst instead seems to be the mediating effect of Transliminality (and buttressed by Paranormal Beliefs) that can be naturally stimulated or increased by certain experiences or settings involving distress or eustress (e.g., Evans et al., 2019; Thalbourne et al., 2003; Ventola et al., 2019). These dis-ease states are sometimes sudden or unexpected as with so-called 'spiritual struggles' or 'spiritual emergencies' (Exline et al., 2014; Grof & Grof, 2017), but they may also occur in rather benign and quasi-controlled settings like legend-tripping (i.e., pilgrimages by adolescents to a site that is allegedly the scene of some tragic, horrific, or supernatural event or haunting) or paranormal tourism (Escolà-Gascón & Houran, 2021; Houran et al., 2002, 2022a). We further think that this apparent dichotomy nicely parallels Taylor's (2011, 2012a, 2012b; Taylor & Egeto-Szabo, 2017) distinction between active versus quieter routes to 'awakening experiences.' It is debatable whether scientists ultimately can control every salient confound or contaminant when studying apparent parapsychological effects in naturalistic or externally-valid environments. But it seems to us that researchers must leave 'cold and clinical' laboratories to seek psi where it apparently prefers to lurk — namely, immersive environments that fuel thin boundary functioning and presumably a healthy dose of enchantment.

Acknowledgments

This study was funded by the BIAL Foundation (bursary #30/20) to whom we express our gratitude. We also thank Rich Ballard, Cindy Little, and Damien J. Houran for their assistance with this project, as well as Jim Kennedy and Caroline Watt for their consultation and guidance on the preregistered study design. The raw data from this research are available (with proper attribution) to qualified researchers at Psi Open Data (<https://open-data.spr.ac.uk/>).

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Prueba de Campo Prerregistrada de un Bucle 'Embelesamiento-Psi'

Abstract: La evidencia de encuestas previas sugiere que el embelesamiento situacional es un estado mental que conduce experiencias relacionadas con psi. En esta exploración y replicación conceptual utilizamos un protocolo de investigación previamente registrado para examinar la tasa de aciertos en una prueba de aplicación móvil ('app') de psi putativo, la cual se proporcionó a los participantes después de haber sido expuestos a dos condiciones en competencia en un orden contrabalanceado: (a) un recorrido "embelesado" e inmersivo en un museo de una casa 'embrujada' contra (b) una sesión 'desembelesada' en una carpa colocada en el exterior, con un video en el que, supuestamente, desenmascaran fenómenos paranormales. Una muestra de 31 voluntarios, reclutados a través de redes sociales, completó la prueba de contrapeso en ambas condiciones y medidas de transliminalidad y creencia en lo paranormal, mismas que convertimos a mediciones altas y bajas (divididas por el valor de la mediana) como covariables de las tasas de aciertos en la prueba de psi. Nuestros hallazgos revelan que niveles altos de transliminalidad y de creencia en lo paranormal, así como las condiciones 'embrujada' (embelesada) contra 'escéptica', cambian las tasas de aciertos generales y el desempeño por encima de lo esperado por azar. En la mayoría de los análisis, estos efectos representaron un cambio mayor al 10% tanto en la tasa de aciertos como en las pruebas contra la tasa promedio de adivinación vía psi. Discutimos estos resultados como evidencia a favor de un modelo interaccionista (ambiente-persona) de ciertos fenómenos parapsicológicos.

Palabras clave: embelesamiento, experiencias inmersivas, liminalidad, creencia en lo paranormal, apertura psíquica

Pré-enregistré sur le Terrain d'Une Boucle d'Enchantement Psi

Résumé : Des études antérieures suggèrent que l'enchantement situationnel est un état mental propice aux expériences psi. Dans cette réplique et exploration conceptuelle, nous avons utilisé un protocole de recherche préenregistré pour examiner le taux de réussite à un test d'application mobile (« app ») de psi putatif qui a été administré après l'exposition des participants à deux conditions concurrentes dans un ordre contrebalancé : (a) une visite immersive « enchantée » dans une maison-musée « hantée » ou (b) une session dans une tente extérieure « désenchantée » avec une vidéo qui prétend démystifier le paranormal. Un échantillon de commodité de 31 volontaires recrutés via les médias sociaux a effectué des tests contrebalancés dans les deux conditions et des mesures de transliminalité et de croyance paranormale, que nous avons converties en mesures élevées et faibles (médiane divisée) en tant que co-variables des taux de réussite au test psi. Les résultats ont montré que des niveaux élevés de transliminalité et de croyance paranormale, ainsi que les conditions « hanté (enchanté) » contre « sceptique (désenchanté) » ont modifié de manière significative les taux de réussite globaux et les performances supérieures à la chance. Dans la majorité des analyses, ces effets ont représenté un changement de plus de 10 % du taux de réussite et des tests par rapport au taux moyen de devinettes psi. Nous considérons que ces résultats vont dans le sens d'un modèle interactionniste (environnement-personne) de certains phénomènes parapsychologiques.

Mots-clefs : enchantement, expériences immersives, liminalité, croyance paranormale, ouverture psychique

Vorregistrierter Feldtest eines ‚Enchantment-Psi‘-Versuchskreises

Zusammenfassung: Frühere Untersuchungen deuten darauf hin, dass situative Verzauberung [enchantment] ein mentaler Zustand ist, der psi-bezogene Erfahrungen begünstigt. In dieser konzeptionellen Replikation und Exploration verwendeten wir ein Forschungsdesign mit Vorregistrierung, um die Trefferquote bei einem Psi-Test mittels einer mobilen Anwendung („App“) zu untersuchen; dabei waren die Teilnehmer zwei konkurrierenden Bedingungen in ausbalancierter Reihenfolge ausgesetzt: (a) einer „verzauberten“ eindringlichen Tour in einem „Spukhaus“-Museum und (b) einer „entzauberten“ Outdoor-Zeltsitzung mit einem Video, das vorgeblich das Paranormale entlarvt. Eine Zufallsstichprobe von 31 Freiwilligen, die über soziale Medien rekrutiert wurden, absolvierte die ausbalancierten Tests in beiden Bedingungen; außerdem maßen wir Transliminalität und paranormale Glaubensvorstellungen, die wir in hohe und niedrige (Median-Split) Messwerte als Kovariaten der Trefferquoten beim Psi-Test umgewandelten. Die Ergebnisse zeigten, dass ein hohes Maß an Transliminalität und paranormalen Glaubensvorstellungen sowie die Bedingungen „verspukt (verzaubert)“ und „skeptisch (entzaubert)“ sowohl die Gesamttrefferquote als auch die über der Zufallserwartung liegende Leistung erheblich veränderten. In den meisten Analysen stellten diese Effekte eine mehr als 10%ige Verschiebung sowohl der Trefferquote als auch der Tests auf Abweichungen von den durchschnittlichen Psi-Ratewerten dar. Wir diskutieren diese Ergebnisse im Sinne einer Unterstützung eines interaktionistischen (Umwelt-Personen-) Modells bestimmter parapsychologischer Phänomene.

Schlüsselbegriffe: Verzauberung, eindringliche Erfahrungen, Transliminalität, paranormale Glaubensvorstellungen, psychische Öffnung

A Virtually-Facilitated Investigation of Anomalous Household Disturbances Reported During the COVID-19 Pandemic

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Abstract: Reports were received from a middle-class family in the Silicon Valley area of California concerning a burst of anomalous experiences (AE) which disrupted their lives while quarantined at home during the COVID-19 pandemic. They reported unexplained cellular dialings, object movements, noises, tactile sensations (pokes, brushes, & bodily “scratches”), and the appearance of liquids. They also reported extreme stress, anxiety, and confusion due to the inexplicability of the phenomena.

Preliminary interviews indicated that this report met the criteria for cases of the anomalous episodic communal kinetic occurrence (AECKO)-type (described in Appendix A) and we agreed to: 1) investigate the AE; and, 2) assist the family. Investigation proceeded using a virtual approach, and the family’s stress, anxiety, and confusion were initially addressed by supplying evidence-based information on similar cases. We recommended family counseling and the parents completed 18 Zoom telehealth sessions involving stress reduction, family communication skills, intuition training, and basic education about anomalous phenomena.

Key findings include a steady decline in the AE correlated with the progress of counseling, up to AE cessation. Analysis of 295 individually logged AE events indicated that features of this case were consistent with other cases in the literature. This case highlights that: 1) an investigator’s personal visit may not be necessary for conducting a detailed and credible investigation of an RSPK-type case; 2) the dual goal of investigating the etiology of the disturbances and assisting the family are complementary rather than conflicting; and 3) a team approach including a licensed clinical health professional is highly recommended for these cases.

Keywords: anomalous experience (AE), poltergeist, recurrent spontaneous psychokinesis (RSPK), field investigation, clinical parapsychology, Anomalous Episodic Communal Kinetic Occurrence (AECKO)

Investigations of spontaneous anomalous phenomena typically involve, as early as possible, on-site visits for observing, photographing, and diagramming the location(s) of the reported anomalous events; observing and interviewing reporters and witnesses of the events; observing physical (trace) evidence of

the events; and witnessing event recurrence, if possible. This is often considered to be a crucial step in determining whether the claimed phenomena might be genuine or not (Auerbach, 1986, Sect. 4; Rogo, 1986, Ch. 10; Roll, 1972/2004, Appendix).

We report here a case of anomalous household disturbances in which we faced a unique circumstance stemming from the 2019 novel coronavirus disease (COVID-19) pandemic, where quarantine conditions prevented an on-site investigation. To circumvent this, we devised and implemented a virtual investigative approach that involved conducting interviews and telehealth counseling sessions with family members using the online video-conference platform Zoom.

In addition to further adding to the case literature on field research, we feel that this case merits reporting for three reasons:

First, a virtual investigative approach may be required in similar quarantine scenarios and other circumstances (e.g., limited scheduling or funding issues). It may also be a useful supplemental tool for other types of field study, as well as for investigators living in different parts of the world who may want or need to collaborate at a distance.

Second, the psychotherapeutic approach utilized in this case, the means by which it was presented virtually, and its outcomes will be of interest to clinical parapsychologists.

Third, the features and patterns in this case are consistent with those found in many well-documented cases of the recurrent spontaneous psychokinesis (RSPK)-type from the past, which suggests that the etiological processes at work in this case – *whatever they may be* – are similar, or perhaps even identical, to these prior cases. That is, the features and patterns observed suggest that it belongs in this group.

Fortuitously, just prior to learning of this case, G.F.S. was formulating the Anomalous Episodic Communal Kinetic Occurrence (AECKO) approach (see Appendix A) to spontaneous cases of the RSPK-type, in discussion with B.J.W. and L.A., among others (Solfvin, 2020, 2021; Solfvin & Williams, 2021). In doing so, it was deemed necessary to create a new rubric – the AECKO acronym – that encapsulated and reflected a basic foundation for a systematic approach to field research. A new acronym was necessary because:

We need an *operational definition* that will clearly identify a specific type of case which lends itself well to scientific investigation;

While RSPK was a major improvement over the folkloric and spiritualist terminology, Roll (personal communication) recognized it as a flawed first step towards building a systematic science;

AECKO builds upon Pratt and Roll's (1958) important (and underappreciated) rubric of RSPK, but it is *not* the same. AECKO elevates the *Communal* (group/family) and *Episodic* (narrative/story) aspects as key identifying features, while de-emphasizing the usual obsession with identifying an "RSPK agent," and entirely dropping the human PK theory as the key etiological factor (PK is not assumed, but is certainly a possible factor). Moreover, AECKO is *organic*, changeable, and grows as new evidence is gathered, and therefore involves considerable re-thinking of the purpose, expectations, and goals of the investigation and re-conceptualizes how best to accomplish it.

The present investigation may also serve as a practical model for how investigators with various backgrounds (field study, clinical, and analytical) can pool their individual knowledge, techniques, and resources to work with witnesses who are experiencing potentially disturbing phenomena and help bring useful insight and resolution.

Brief Background of the Case

The present case involved ostensibly anomalous physical disturbances that were said to be taking place in a small, three-bedroom townhouse occupied by a middle-class family living in the Silicon Valley region of California. The family consisted of Eileen (a 50-year-old stay-at-home mother & wife), Robert (a 56-year-old Silicon Valley engineer), and their two teenage children: 16-year-old Nathan and 14-year-old Emma (all pseudonyms).

The disturbances first became readily apparent to the family in mid-June of 2020. There were some hints that they may have begun as early as April or May, about a month or two after the family began observing a mandatory state-wide “shelter-in-place” lockdown order on March 19, 2020 in response to the emerging spread of COVID-19 in California and across the United States. This forced Nathan – who was visiting the Middle East on an 18-week study abroad program at the time – to return home to California after only seven weeks. The family soon found themselves living together in close quarters twenty-four hours a day, seven days a week, not only due to the mandatory pandemic quarantine lockdown but also the severe air quality hazard alerts from the wildfires that subsequently broke out in the Santa Cruz Mountains and in Napa Valley in August, September, and October.

Another event which closely preceded the disturbances, and which Eileen felt may have played a relevant role in stimulating their onset, involved a pet rabbit that the family had been fostering from February 1 to June 1. For much of that time (starting in mid-March), the rabbit was housed in a pen that took up roughly half of the small living room that the family used as a multi-purpose area (serving as a temporary office, meeting room, and leisure space), and the resulting reduction of available space became a source of stress for several members of the family. The eventual need to return the rabbit when the fostering period was over also took a strong emotional toll on Emma, who had developed a bond with the rabbit and did not want to give it up.

According to Eileen, the disturbances in the home were initially reported to occur “almost daily... On some days it goes on for several hours in a row; other days, it’s just 1 or 2 ‘events’ per day” (e-mail communication to B.H., 7/31/2020). As they progressed, effort was made by Eileen and B.H. to diligently chronicle the disturbances in a written observational log that noted the date, approximate time, witnesses present, and relative circumstances under which each one seemed to occur. For reasons of brevity, we provide only a few illustrative examples from this log in Table 1, and for further details, we refer readers to a concise summary of the disturbances that has been presented elsewhere (Auerbach et al., 2022). A full chronological table of all 295 events recorded in the log is available on request as a separate 22-page Appendix file.

Table 1
Types of Disturbances Reported in the Silicon Valley Case

Type	Examples
object movement/ displacement	"July 27, 2020: Robert and Emma were in the kitchen discussing the disturbances when an empty food blender moved off the counter and landed on the floor. October 5, 2020: Eileen, Nathan, and Emma were in the kitchen when Eileen's cellular phone, which was charging on the island counter, disconnected from its charger and flew to the floor near the refrigerator."
percussive noises	January 19, 2021: On three consecutive occasions, Emma heard knocking sounds on her bedroom wall, which seemed to be coming from outside of the front of the house (on the other side of the wall). The sounds were also heard by Eileen and Robert, but upon checking on two of the occasions, Robert found no one outside.
materialization/de- materialization	"Various types of liquids (antibacterial gel, soap, water, food coloring, ink) would be found smeared on the walls and/or on other personal objects. July 28, 2020: After Emma told Eileen and Nathan about how she "loves" to clean up after her friend's dog, pieces of fecal matter (presumed to be canine in origin) were discovered on the hallway floor, even though the family does not have a dog (or any other free-roaming pet). Small amounts of food, sweets, and beverages would suddenly appear or disappear."
electrical malfunction	"Each of the family's cellular phones would spontaneously dial the 911 emergency number on various occasions. While parked in the garage on three occasions, the alarm sounded and the head/tail lights flashed spontaneously on Eileen's new car, with no one handling the car key fob. Emma and Robert were in the garage on two of the occasions, while Robert was working alone in the garage on the third."
tactile sensations	Feelings of being touched, brushed, poked by something unseen were reported by Emma, Nathan, and Eileen. Emma also reported instances of being "scratched" (accompanied by the appearance of dermal marks on her skin).

Investigative Procedures

On June 22, 2020, L.A. received an initial e-mail referral to the present case and he subsequently established phone contact with Eileen and Robert, who were seeking an explanation and eventual eradication of the disturbances. A brief account given during the initial contact appeared to match the AECKO criteria (AO, K, E, & C; as outlined in Appendix A). These criteria are based upon phenomena historically reported in cases of the RSPK-type published in peer-reviewed journals and books (e.g., Barrett, 1911; Bayless, 1967; Bender, 1974; Carrington & Fodor, 1951; Carvalho, 1992; Cox, 1961; Gauld & Cornell, 1979; Huesmann & Schriever, 1989, 2022; Owen, 1964; Rogo, 1986; Roll, 1972/2004, 1977; Thurston, 1954).³ The possibility that the case was a deliberate hoax was mitigated by the following considerations:

³ The IGPP Freiburg group (founded by Hans Bender) and its affiliates and associates have made impressive progress in the understanding

The family reached out to us for *help*, and not for publicity or any other (known) reason; the family had already notified the local police to ask for *help*; the police discovered no signs of fraudulent or suspicious activity while investigating; the family intentionally avoided sharing any details with friends & neighbors; the family was cooperative with any suggestion which might reduce or end the disturbances; the family agreed to, and insisted upon, anonymity (consenting to scientific publication only); the family did not seek any other outside help after being presented with our investigative plan; and the family readily agreed to our counseling suggestion, despite the financial costs to them.

Given the COVID-19 quarantine, we employed a virtual investigative approach in this case. An AECKO case is investigated as a *system*, a complex collection of interrelated parts, or subsystems, which results in observable phenomena (von Bertalanffy, 1968; Maturana & Varela, 1980; also see Appendix A). The AECKO investigative approach relies upon the investigators identifying, controlling for, or removing as many *a priori* assumptions as possible. For example, all observations within and around the time/space window of the AECKO case are considered potentially relevant, and no individual part or subsystem is assumed, *a priori*, to be more (or less) important than others. Also, it is *not* assumed that the goal (1) of collecting scientific data on the anomalous experiences (AE) is more (or less) important or urgent than the goal (2) of providing clinical parapsychological assistance to the experients, or that these goals are independent of one another. Further, the AECKO investigative approach does *not* assume that the investigative team is separate from the AECKO process (as objective observers), but rather, that it may become a part of it. The investigation process is thus driven by the observed situation, the needs expressed (e.g., by witnesses), by practical limitations, and by the natural flow which promotes smooth introduction of the investigative team into the system.

Many previously documented cases of the RSPK-type have emerged out of underlying *psychosocially adverse situations* occurring among the experients coincident with the case onset. Such adverse situations include (among others): anxiety, stressful work- & school-related issues or relationships, marital problems, unresolved bereavement, and changes in health & well-being (for a concise overview, see Williams, 2019). The identification, documenting, and addressing of psychosocial factors in an AECKO case may not only provide some relief to the experients, but may also offer insights for the nascent field of clinical parapsychology, and may suggest possible relationships with the etiology of the anomalous occurrences for future study.

In the present case (as is common in others), we make effort to address the needs of the family whose overt goals is to stop the disturbances. This was done as follows:

Listening nonjudgmentally to their account of the disturbances, from beginning to current;

Giving *assurances* that: 1) their experiences are not necessarily an indicator of mental illness; 2) other “normal” families have experienced similar phenomena; 3) we *can* help them; and 4) the disturbances *can* (and will) go away; all with cited examples;

Outline a plan, with the reporting persons’ input, for *steps* to be taken (e.g., data collection, interviews, site visits, providing education/information including reading materials);

Obtaining informed consent on what the team will and will not do; make suggestions and help arrange additional resources (e.g., counseling) as needed.

The scientific investigation of AECKO cases does not differ significantly from previously published procedures for RSPK-type investigations (Auerbach, 1986, 2004; Rogo, 1986; Roll, 1972/2004). However, the AECKO approach places emphasis on *systems theory*, and the reframing of observations as being multi-purposed and potentially relevant to either or both the psychosocial and physical environments, without favoring one over the other.

The implemented virtual approach consisted of personal interviews, a clinical evaluation session, and a series of telehealth sessions that were conducted virtually through private, interactive online video sessions held via Zoom. Prior to the first Zoom session, Eileen and Robert were supplied with, and willingly returned, signed forms of consent to treatment by B.H., a licensed clinical psychologist. Consents included permission to participate in a research study and to make digital audio-visual recordings of the online chat sessions under the condition that, for the sake of privacy, the recordings would only be accessible to the investigative team. Both parents provided written and verbal consent for their two children, who were both under the age of consent.

Personal Interviews

Interview sessions with Eileen and Robert were conducted on seven occasions by L.A. (June 24, 2020; July 3, 2020, July 18, 2020; July 10, 2021) and/or G.F.S. (July 22, 2020; October 18, 2020; July 6, 2021).

Clinical Evaluation Session

B.H. conducted an initial evaluation session with Eileen and Robert on August 4, 2020, to assess the family's general situation and identify any personal psychological issues they might be facing which could relate in some way to the disturbances. Collaborative family therapy included discussion of family history and dynamics, potential stressors, and desired therapeutic goals.

In addition to the narrative interviews and reports from those in attendance, some clinical self-assessment measures were separately completed:

- *Adverse Childhood Experiences (ACEs) Checklist*: A 10-item, self-report checklist designed to assess history of trauma, which can be used to evaluate or predict future potential personal issues such as alcoholism, difficulties with work performance, depression, and suicide risk (based on the results of the original ACEs study conducted by Kaiser Permanente and the Centers for Disease Control, which found a correlation between a history of exposure to childhood trauma and the development of personal issues later in adulthood; Felitti et al., 1998). Completed by Eileen and Robert.
- *Los Angeles Symptoms Checklist* (King, King, Leskin, & Foy, 1995): A 43-item, self-report checklist designed to assess possible symptoms of post-traumatic stress disorder (PTSD) and general psychological distress. Items are rated on a 5-point Likert qualitative scale indicating the degree to which each listed symptom may be problematically affecting the individual (from "no problem"

to “extreme problem”). Higher scores are suggestive of greater exposure to psychological trauma. Completed by Eileen and Robert.

- *Parapsychological History – Narrative Client Questionnaire*: A general questionnaire, abridged from a set of questions presented in Auerbach (1986, Appendix), which is designed to assess an individual’s history of ostensible psychic experiences. Completed by Eileen and Robert.
- *Highly Sensitive Person (HSP) Self-Assessment Scale* (Aron, 1996; Aron & Aron, 1997): A 27-item, “true/false” questionnaire designed to assess an individual’s personal degree of sensitivity and emotional reactivity to sensory stimulation and sensory processing overload. Rating twelve or more items as “true” on the scale is generally taken as an indicator of likely being “highly sensitive.” An informal online version of the scale (<https://hsperson.com>) customized for children (containing 23 items, with a HSP rating cutoff threshold of 13 or more) was completed by Emma at the encouragement of Eileen. Eileen completed the adult version, in which a threshold of 14 or more was taken as indicative of HSP.

Apart from Emma completing the HSP self-assessment scale, the children did not attend or actively participate in the evaluation session.

Telehealth Sessions

Following the evaluation session, a total of 18 family telehealth sessions were conducted by B.H., starting on September 14, 2020 and ending on March 9, 2021. The sessions were each around 50 to 75 minutes in length, and were initially scheduled on a weekly basis (from September 14 to November 18), but were later reduced to bi-monthly (from December 2 to January 20) as some progress seemed to be made. They reverted to weekly for a brief time (February 17 – 23) as the family began facing brief setbacks prior to the apparent cessation of the phenomena on February 3. As no further phenomena occurred after that date, the family felt that weekly sessions were no longer needed, and only one other session was held on March 9 to bring closure to the therapeutic relationship.

Participation in the telehealth sessions varied among the individual family members. Eileen and Robert attended all of the sessions, and were the prime participants. Although he did not participate in the evaluation session, Nathan began to attend for a brief time (approximately 10 to 20 minutes) at the beginning or end of almost every subsequent session, fitting around his school homework schedule. Despite being asked on several occasions, Emma steadily refused to attend any of the sessions, and thus did not actively participate in any of them; in lieu of this, any information relating to her own personality and behavior was openly volunteered during the sessions by Eileen, Robert, or Nathan, based on their own personal recollections and impressions.

(This relative lack of telehealth participation by the children was not considered an issue, as systemic family therapy recognizes the family as a single emotional unit. Individual member interactions are part of a dynamic, complex, interconnected system of reciprocal interactions. In family therapy, social engagement, connection, disengagement, and/or emotional reactivity echo and reverberate within the family system. As a result, the whole system is impacted by way of any one member within the system interacting with one or more of the other members. While it is ideal for each member of a family unit to attend ther-

apy, it is not essential to effect positive change in the system: If any one member of the system changes, the whole system changes. For additional background on systemic family therapy, see e.g., Kerr, 2000; Titelman, 2015; Winek, 2009, Ch. 5).

During the sessions, B.H. employed a broad spectrum of psychotherapeutic and intuitive techniques to help guide the family in resolving issues and achieving therapy goals, with the assumption that doing so would be helpful in reducing or eliminating the disturbances. The techniques included:

- *Education: Basic information was provided about RSPK-type phenomena and the current parapsychological research findings, theories, and perspectives associated with them, in an effort to reduce any potential fears or misconceptions;*
- *Strategic “Brief” Personal Therapy Techniques & Assigning of Homework: Basic stress reduction and crisis intervention techniques were introduced as a means of regaining calmness and de-escalating tense situations. These techniques, primarily focused on “embodied awareness,” are listed in Table 2. The techniques were put into self-practice through homework assignments completed between sessions.*

Table 2

Stress Reduction & Crisis Intervention Techniques Used in the Present Case

Technique	Details
breathwork practices	
mindfulness-based “self-observation” methods	
inner feeling/sensation identification	personal feelings (emotional and sensate) were named by providing a vocabulary of various recognized subtle feelings (sensate – “felt sense,” emotional, & intuitive), allowing for clarification and discussion of one’s inner experiences with other individuals
need awareness	coaching was provided on how to become aware of one’s own deeper unexpressed needs, as well as those of others
energy work and/or eye-movement desensitization and reprocessing (EMDR) therapy	used if PTSD was present to reduce acute trauma reactions and/or PTSD reactions induced from the shock of witnessing or experiencing unusual phenomena. Recent meta-analytical findings suggest that EMDR can be effective for some patients in this regard (Chen et al., 2014; Davidson & Parker, 2001).
intimacy enhancement exercises for the marital dyad	provided to Eileen and Robert to address issues of situational disengagement, stemming from their frequent inability to share any private time together as a couple during the lockdown

- *Family Systems, Transpersonal, and Clinical Parapsychological Techniques which were utilized with the family. These are listed in Table 3.*

Table 3

Family Systems, Transpersonal, & Clinical Parapsychological Techniques Used in the Present Case

Technique	Details
communication skills training	education was provided on personal understanding of how individuals all need to feel seen, heard, understood, and confirmed. Training in skills related to deep listening (i.e., listening with the whole body, heart, & soul), speaking (self-expression through “I” statements, instead of “you” statements), honestly sharing praises & gripes, empathic/telepathic impressions of others’ needs, checking out assumptions, and negotiation was also provided.
exploration of cultural & transpersonal elements	cultural/spiritual/religious orientation, beliefs, and practices were individually acknowledged and discussed, with examination on how this might be contributing to (i.e., helping or hindering) the resolution of the disturbances.
intuition training	expanding sensory perception into possible extrasensory perception, including practices focused on enhancing empathetic-telepathic connections with others were introduced and supported by “inner listening” to one’s self, and “listening with the ears of one’s heart” to others (Hedva, 2020).

Observational Data Analysis

To see how the reported disturbances might have changed as the case temporally progressed, the individual events recorded within the observational event log kept by Eileen and B.H. were tallied as a function of time (measured in units of days). The recorded events were also subdivided into categorical clusters in order to examine for any subtle symbolic themes which might have possibly been reflected in the disturbances.

Results

Psychotherapeutic Evaluations

From the initial clinical evaluation and the series of telehealth sessions that B.H. conducted with the family, it was possible to construct basic psychological profiles of the individual family members which could provide some possible insight into their psychosocial dynamics and how it might have related to the disturbances reported in their townhouse:

Eileen – As the wife and mother of the family, Eileen typically manages the entire household during the day and found her regular homemaking and caregiving duties being expanded as a result of the mandatory quarantine lockdown. These expanded duties included: supervising the children’s sudden transition to full online education (after public schooling facilities were closed due to the pandemic), organizing & coordinating family events and activities at home, and establishing new family routines while they re-

mained homebound. In addition, she had to mediate the increased number of quarrels and conflicts that had erupted between the children while living in close quarters during the lockdown (this markedly contrasts with the children's relations prior to that time, which she described as being "close"). She reported feeling that she was "playing the bad guy" to motivate Emma to do her share of household chores. At times she found herself questioning whether she might be suffering from PTSD.

Eileen's responses on the ACEs checklist indicated no history of trauma, substance abuse, neglect, or family violence (score of zero). However, her Los Angeles Symptoms checklist responses were indicative of slight to moderate problems with: tension & anxiety, difficulty in expressing feelings, excessive jumpiness, difficulty concentrating, appetite changes, difficulty falling asleep, and marital issues (stemming from her frequent inability to share any private time together with Robert during the lockdown; she expressed a need for connection and feeling close to her husband). Two possible signs of the physical toll that stress was having upon her were an abrupt loss of body weight (she reportedly lost ten pounds while the disturbances were active), and finding clumps of her hair having fallen out onto her pillow by the end of January 2021.

Eileen's responses to the online HSP self-assessment scale resulted in a score of 17, suggesting that she could be classified as highly-sensitive.

As her means of coping with stress, Eileen was often engaging in exercise, maintaining a front yard plant, and practicing pranayama yoga.

Robert – As the sole income provider of the family, Robert had to adjust to working from home during the lockdown, initially by making the dining room table into a makeshift work desk, and later by converting part of the townhouse garage into a temporary office. In addition to deadline pressures and maintaining other regular tasks of his employment, he found his patience tested on several occasions by the children's frequent quarreling, leading to feelings of annoyance, stress, and difficulty concentrating. Having a background in science and engineering, he has generally adopted a mechanistic worldview ("I like to know how things work; I like structure and routine. If none exists, I create it"), and has admitted to feeling anxious and "confused" about how to explain the disturbances because they "seemed to defy the laws of physics." He avoided discussing the disturbances for this reason, and reported he "just wants it [i.e., the disturbances] to go away." At times the anxiety he felt following the disturbances resulted in overt physical after-effects such as body trembling and jaw movement. The cluster of disturbances that took place in the master bedroom on February 3, 2021 were particularly upsetting to him, leaving him feeling ill and unable to work, requiring a few days to recover as a result; he reportedly told Eileen and Emma after the incident that the disturbances were "...taking years off his life." According to Eileen, he also experienced an abrupt loss of body weight (ten pounds) while the disturbances were active.

Robert's responses on the ACEs checklist indicated no history of trauma, substance abuse, neglect, or family violence (score of zero). However, his Los Angeles Symptoms checklist responses were indicative of slight problems with: irritability, tension and anxiety, difficulty concentrating, and sleep disturbances.

To cope with stress, Robert engaged in activities such as reading, listening to music, and walking. He also played the guitar.

Nathan – In forming his own identity as a maturing young man, Nathan took a serious practical interest in the family's religion, having chosen to become orthodox and faithfully observing all of its traditions and rituals. This apparently became one source of conflict with Emma, who chose not to adopt the family's religious beliefs and who seemed antagonized at times by Nathan's orthodox religious observation. He felt displeased with having to abruptly return home from his study abroad program (which he was enjoying) after the COVID-19 pandemic began, and he had to forego summer camp opportunities with his circle of friends as a result.

During his brief participation in one of the telehealth sessions, Nathan was able to recognize and communicate some inner feelings of being sad, and an unexpressed need to feel respected by Emma. When asked by B.H. to generally describe his own impressions of his relations with Emma during the lockdown, he initially replied (in terms of a relative ratio estimation): "80/20 to 75/25 percent of the time, we're not on good terms." Eileen expressed shock at this, and Nathan then changed his estimates to "60/40 to 70/30."

Emma – As a young teen girl, Emma seemed to be facing many of the puberty-related issues that other young teenagers regularly face, which included a concern with body image: Apparently, she frequently felt self-conscious about her weight, often asking other family members "if they think she's fat," and she once described a dream she had on the night of August 4 in which she envisioned herself not eating and only drinking water for one week. Regarding her social skills, her parents generally stated: "She was very shy, didn't like speaking in class, or being called on by the teacher... didn't like talking to waiters to order food." She identified herself as being agnostic/atheistic, choosing to reject her family's religion and refusing to observe many religious holidays and traditions. As mentioned, this has been a frequent source of disagreement between her and Nathan (who, in becoming orthodox, has the polar opposite perspective).

Like Robert, she avoided discussing the disturbances with her family, and "just wants it to go away." She personally believed that Eileen was the causal agent because Eileen wanted to "keep talking about it." At times, her responses to the disturbances resulted in overt physical after-effects such as hand/body trembling and one instance of fainting.

Eileen noted that Emma's responses on the online HSP self-assessment scale was a score of 18, which suggests that she could be classified as a highly-sensitive person. Preliminary hints of a possible correlation between HSP scores and psi experiences have been found in at least two previous instances: In the first, Alexander (2000) found that a female psychic claimant who produced marginally significant results on a laboratory-based remote viewing test had an HSP score of 20. The second comes from a combined RSPK-haunt case investigated by B.J.W. in 2016 (unpublished data), in which one of the three female experiencers at the center of the case had an HSP score of 17. The other family members mentioned on occasion that Emma exhibited possible psychic abilities; Eileen cited the following as one example:

Emma dreamed about a picture that included Robert and someone he knew decades ago that Emma never knew existed. The next day she asked Robert about this person in her dream and he confirmed [this person's] existence. Then I showed her a picture of this person and she said the picture I showed her looked almost identical to the picture in her dream.

Nathan also told B.H. during a telehealth session on February 17 that Emma is “...very good at predictions,” suggesting possible precognition. Emma’s ostensible abilities were not formally tested and verified under controlled conditions, however.

Emma had some mental health issues, and was diagnosed with generalized anxiety disorder in December of 2018. She was previously involved in a cognitive-behavioral-based exposure therapy program, and was prescribed 150 mg of Sertraline (Zoloft), a selective serotonin reuptake inhibitor (SSRI). She did not like being on this medication and abruptly stopped taking it (without being gradually weaned off of it) for a brief time in October 2020. The adverse feelings that arose as a result of her treatment experiences have led her to form a dislike of physicians and therapy of any kind, which likely contributed to her refusal to attend and actively participate in the family telehealth sessions. She also experiences anxiety when encountering spiders, regardless of type or size. Emma’s mental health issues may have a possible genetic link: Eileen’s sister has been known to suffer from anxiety and depression, for which she has also been prescribed SSRIs as a means of treatment.

According to Eileen, the activities that Emma engaged in to cope with stress included: talking to her friends via cellular phone calling/text messaging, watching Internet videos, and doing arts and crafts (such as painting and making cards and friendship bracelets).

In addition, the clinical evaluation and telehealth sessions seemed to indicate that the family was being affected by multiple stressors during the lockdown period, which were bringing about a number of unpredictable changes, losses, and uncertainties. These stressors included:

- *Confining Effects:* The COVID-19 “shelter-in-place” quarantine restrictions imposed in California, as well as the hazardous air quality alerts resulting from the local wildfires, had kept the family confined in close quarters for prolonged periods of time (ranging from weeks to months). Several studies indicate that, at times, such prolonged social distancing and confinement can be associated with negative psychological effects such as stress, confusion, anger, frustration, depression, anxiety, loneliness, and boredom in both adults and children (American Psychological Association, 2020a; Brooks et al., 2020; Castaldelli-Maia et al., 2021; Courtney et al., 2020; McGinty et al., 2020; Shen, 2020). The inability to leave the home and spend time in wooded areas during the wildfires seemed particularly impactful upon Eileen and Robert, who enjoy hiking and spending time outdoors.
- *Loss of Opportunity & Fulfillment of Expectations:* Due to the COVID-19 pandemic, Nathan and Emma missed a number of social opportunities, extracurricular activities, and milestone moments. Nathan was not pleased at having to abruptly terminate his study abroad program and Emma was unable to observe her 8th grade graduation ceremony and was forced to forego participation in gymnastics. Both children were separated from their peers and familiar school and social routines. As some studies seem to indicate (e.g., Courtney et al., 2020; Loades et al., 2020; Racine et al., 2021; Shen, 2020; Xie et al., 2020), this kind of enforced social isolation, sustained over a prolonged period, can have adverse effects upon the mental health and well-being of children and adolescents. Both children also expressed signs of preoccupation and anxiety over their school performance (especially Nathan, who was preparing to take his college aptitude tests).

- *Separation Effects*: Emma had developed a close bond with the foster rabbit and found it very difficult to give it up, and she mourned its absence afterward.
- *Project Delays*: Their plans to build a large office shed in the backyard of their townhome had several delays and setbacks.
- *Financial Burden*: Due to an unexpected mechanical failure with Eileen's car that was too costly to repair, the family was forced to take on the hefty financial burden of purchasing a new car in September 2020.
- *Insect Infestation*: The cabinet drawers in the kitchen were infested with flour beetles (aka. "pantry bugs") in November of 2020, which necessitated a thorough emptying and cleaning.
- *Personal Effect Over Local & National Events*: The family felt personally affected and/or concerned over several events that took place on the local and national level during the lockdown. These included:
 - o the steady increase in COVID-19 case numbers in California (which increased the family's worries over potentially becoming infected with the coronavirus, prior to the availability of vaccines)
 - o the controversy over, and the eventual outcome of, the 2020 U.S. Presidential election
 - o the death of U.S. Supreme Court Justice Ruth Bader Ginsburg on September 18, 2020
 - o receiving news that a family friend had been diagnosed with breast cancer
 - o the U.S. Capitol insurgence that took place on January 6, 2021

As some survey studies seem to indicate (American Psychological Association, 2020b; Holman et al., 2020), the rise in COVID-19 case numbers, as well as the events with potential impact upon the future of the nation, have both been significant sources of stress for some Americans over the course of the lockdown. The emergence of such social stressors has correlated with notable deviations from nominal randomness in the output of random number generators (Nelson, 2020), perhaps subtly hinting at a possible link to PK.

- *General Disagreements*: A number of general disagreements arose among the family members throughout the course of their close indoor confinement.

Eileen tended to generally notice that: "On the days where [sic] the frequency [of the disturbances] increases, there seems to be extra frustration and anger before the activity starts up," and that a disturbance "...always happens right after there has been conflict or a voice has been raised" (e-mail communication to B.H., 8/19/2020).

Eileen also generally noticed that disturbances in the townhome tended to take place in four situations: In the first, all four family members are present in the home. In the second, only Nathan and Emma are present. In the third, only Eileen and Emma are present. And in the fourth, only Robert and Emma are present.

No disturbances reportedly occurred in two situations: In the first, only Robert and Nathan were present in the home. In the second, only Eileen and Robert were present. Emma's presence seemed to be most commonly tied to the disturbances, and she was likely the primary agent.

From B.H.'s general viewpoint, "...the activity seems to be focused on 'power-struggles and feeling judged,' feeling out of control, and managing what I call 'existential uncertainty' [i.e., being in a state of uncertainty regarding the future & direction for one's country and lifestyle]." Several of the issues relating to authority and being judged seem to relate to Emma, who does not like being told what to do and is fearful of being judged for being "different" from the rest of the family, leading to a sense of isolation (i.e., a "black sheep" scenario).

B.H. further pointed out that the possible impact of larger systems – like overcrowded intensive care units, an unprepared health care system, and other dysfunctional societal institutions, including political institutions – might also have contributed to the collective tension experienced by the family, as well: "Jung (1959, pp. 306 – 307) suggested that social systems, both individual and societal, are under the sway of seemingly hidden archetypal forces – defined as *nonpersonal* collective forces – and conditions which may affect us personally. According to a report issued by the Evidence-based Policy Institute (Shen, 2020), the forced isolation and disruption of normal daily routines brought on by the COVID-19 quarantine is known to heighten '...irritability, anger, confusion, frustration, loneliness, denial, and despair' (p. 5) for children, teens, and adults. In the present case, perhaps the intensity and discord of the COVID-19 pandemic had generated a collective energy that infiltrated the family system, adding undue stress to the family, who unwittingly discharged the built-up collective stress and tension psychokinetically, and/or discharged the pent-up energy through one (or more) particularly sensitive individuals (i.e., a poltergeist agent within the family group), much like the role of the so-called 'identified patient' in family therapy."

AECKO Assessment

Early on while assessing the detailed descriptions of the disturbances given by Eileen and Robert in the personal interview sessions, G.F.S. noticed that the AECKO criteria (Solfvin, 2021; Solfvin & Williams, 2021) started falling into place: The reason that the family reached out for help was primarily due to the *Anomalous Occurrence (AO)* – the burst of multiple related anomalous events which seemed to defy "normal" explanation. This AO met the *Kinetic (K)* criterion via the energetic events, which assured that something objective was occurring in the physical world, and at least one of which occurred in full view of several witnesses and all known possible "normal" causes seemed to be controlled or eliminated. The *Communal (C)* criterion was met because the cellular family group of four persons served as witnesses, reporters, and victims of the AO. The *Episodic (E)* or "narrative" feature gradually emerged as the investigation progressed, as a group story began playing out within a restricted time window, in a specific target location (the townhouse), with a distinct beginning, middle, and projected ending.

Moreover, it became clear that this case met a key feature of AECKO cases: *paradoxical pairing* of two distinct types of phenomena. These are: 1) a burst of anomalous events which startles the family group; paired with 2) the threat of potential collapse of this family group's bonding structure. *Both* aspects of this paradoxical pairing are independently worthy of investigation, with the latter (psychosocial setting) having even more urgency than the former (AO) because of its potentially serious clinical risk factors and possible therapeutic insights.

Analysis of Observational Data

Over the course of the roughly 7.5 months that the disturbances were active in the townhouse, a

total of 295 individual disturbance events were recorded in the written observational log of events kept by Eileen and B.H. Figure 1 displays the daily total number of recorded disturbances plotted as a function of time (in terms of calendar days; dark-colored circles), along with each of the scheduled calendar days on which B.H. conducted a telehealth psychotherapy session with the family (light-colored squares). As indicated by the regression line, a significantly declining trend in the number of daily recorded disturbances occurs over time ($r = -0.397$, $p = .001$, two-tailed), indicating that fewer disturbances tended to be recorded as the months passed. It is also worth noting from Figure 1 that, apart from four exceptional days in which clusters of disturbances were reported (resulting in each of them having a daily total > 5), the marked drop in recorded disturbances from September onward (when most of the daily totals are < 5) seems to visibly correlate well with B.H.'s series of telehealth session days (which began in September).

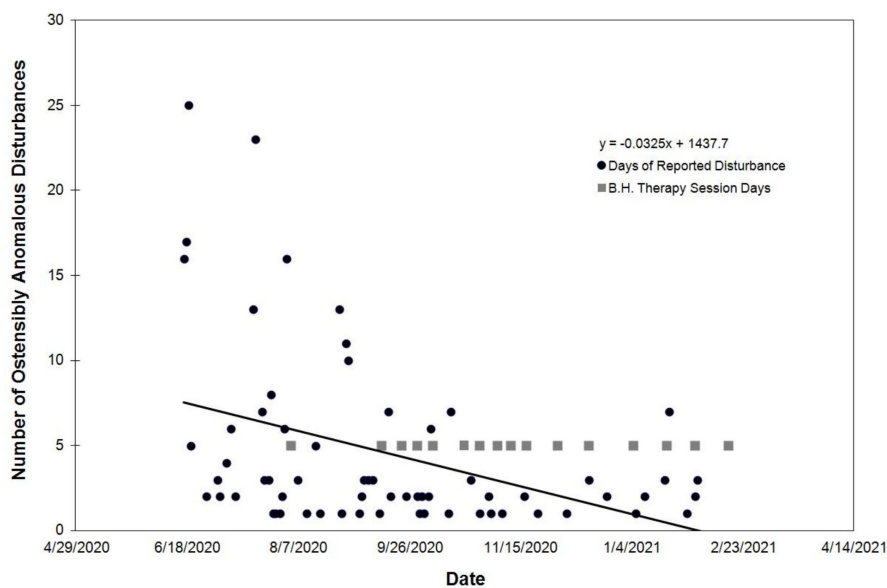


Figure 1. Scatterplot showing the number of ostensibly anomalous physical disturbances recorded per day in the written observational log kept by Eileen and B.H. as a function of time (calendar days). The scheduled days of B.H.'s telehealth sessions with the family are arbitrarily indicated by the light-colored squares plotted horizontally along the five line.

In addition, several features were identified in the observational data which seemed to be consistent with some of those found in other documented RSPK-type cases:

Suggestive Object Focusing: Some instances were logged of the same object (or type of object) having been moved or affected multiple times, whether on consecutive or non-consecutive occasions. The most frequent objects, and the number of repeated movements/effects associated with them, are listed in Table 4. The most frequently moved/affected objects were cellular phones, a device that has recently taken on some degree of personal meaning for many people in a technologically-driven culture. Instances of cellular phones being affected have been reported in only one other recent RSPK-type case so far (Kruth & Joines, 2016).

Table 4
Possible Object Focusing in the Silicon Valley Case

Object	# Times Moved/Affected
cellular phone	40
soap	13
laptop computer	11
chocolate/candy/gum	11
water	7
face scrub bottle	7
TV	7
stuffed animal	7
eyeglasses	7
lights/lamps	7
pillow	6
toys	6
car	5
blanket	5
flashlight	5
antibacterial gel	4
floor scale	4
clothes	4
toothbrush	3
sunscreen bottle	3
religious items	3
wristwatch	3
back massager	3

Object focusing tends to be a fairly frequent feature of RSPK-type cases: In his survey of 116 cases, Roll (1977) found that 89 of them (76.7%) contained this feature.

Tactile Sensations: There were 24 instances in which a member of the family reported feeling a tactile sensation on one or more occasions. The breakdown of these instances is given in Table 5.

Table 5

Instances of Tactile Sensation Reported in the Silicon Valley Case

Sensation	# Instances
pokes on back/thighs/legs/buttocks	17
feeling of “something brushing” against leg	2
feeling “things”/fingers around the head	3
hair being pulled	1
pressure placed on lower back	1

Thirteen of these sensations were reported by Emma, although four instances were reported by Nathan and seven by Eileen. (It is notable that Robert did not report any events of this type.)

Although not a very common feature of RSPK, the experience of tactile sensations similar to these has been reported in a relatively small fraction of cases – around 4% in Roll’s (1977) survey, and 15% in the survey of 500 RSPK and haunt cases by Gauld and Cornell (1979).

Emma also reported two instances of being “scratched” on her body, which were accompanied by the appearance of red dermal marks. This type of sensation has been reported in other RSPK-type cases such as Indianapolis (Roll, 1970) and Talpa (Mulacz, 1999), as well as in combined RSPK-haunt cases such as Berini (Roll & Tringale, 1983) and Johnson (Johnson & Henderson, 1995). It has also received mention in some of the cases summarized by Thurston (1954, Ch. 2) and Owen (1964, Ch. 11). Surveys again indicate that while this is not a common feature of RSPK, it has still been reported in a small proportion of cases – around 4% in Roll’s (1977) survey, and 15% in the Gauld and Cornell (1979) survey.

Spontaneous Appearance of Water: There were four instances in which one or more members of the family were splashed with water of unknown origin. Other RSPK-type cases that have included this feature are Methuen (Bayless, 1967, Ch. 10), Scherfede (Bender, 1974, pp. 138 – 141), Stühlingen (Gruber, 1980, pp. 6 – 7), Poland & Switzerland (Bugaj, 1996), and two cases investigated by L.A. (Auerbach, 2004, pp. 154 – 155; Auerbach, 2005, pp. 84 – 91). Broader surveys indicate that this feature is reported in a very small minority of RSPK-type cases – 2% in the Roll (1977) survey, and 5% in the Gauld and Cornell (1979) survey.

Spontaneous Appearance of Fecal Matter: Assuming they were anomalous in origin, there were two instances in which fecal matter appeared in the townhouse by unknown means. Although it is not unheard of, surveys indicate that this is also not a very common feature of RSPK-type cases, being reported in about 3% of the cases in Roll's (1977) survey, and about 4% of the cases in the Gauld and Cornell (1979) survey.

Unusual Trajectory in Object Motion: There were at least two suggestive instances in which disturbed objects seemed to take on an unusual trajectory in their motion. In the first instance, a fragile Galileo thermometer fell from the top of a dresser in the master bedroom and landed on the floor without breaking or suffering any overt damage. The bedroom floor was carpeted and the landing area was covered with a rug, which may have softened the landing.

In the second instance, a hole puncher seemingly flew around a sharp 90-degree corner in order to land where it was found. This is reminiscent of a similar incident in the Columbus case (Roll & Storey, 2004, p. 202; Stewart, Roll, & Baumann, 1987), in which a socket wrench also seemingly went around a sharp curve in order to land where it did.

Unusual trajectory is a feature reported in 41% of the cases in Roll's (1977) survey that involved object movement. It was also found in 45% of the 54 German cases surveyed by Huesmann and Schriever (1989, 2022).

Possible Symbolic Themes: Like in some other RSPK-type cases (e.g., Auerbach, 2004, pp. 154 – 155; Barrington, 1969, p. 156; Fach, 2011; Gerding et al., 2002, pp. 10 – 11; Roll, 1968, pp. 289 – 292; Roll, 1970, pp. 91 – 94; Teguis & Flynn, 1983, Case 1), certain symbolic themes seemed to be subtly reflected in the types of objects affected in the present case. The three themes which seemed to stand out the most were:

Cleansing & Hygiene: There were 47 logged instances in which the affected objects had a common purposeful use in, or relation to, cleaning/disinfecting, grooming, and/or personal hygiene. The breakdown of these instances is given in Table 6.

To some extent, this theme could be seen as symbolically reflecting two aspects of the family's psychological situation: First, the outbreak of anomalous events in this case occurred over the course of the COVID-19 pandemic, a time when issues of adequate cleansing and disinfection were of utmost concern for human health, and were thus frequently on the minds of many people, including the family.

Table 6
Cleansing & Hygiene Objects Disturbed in the Silicon Valley Case

Object	# Times Moved/Affected
soap	13
face scrub bottle	7
floor scale	4

antibacterial gel	4
toothbrush	3
sunscreen bottle	3
hair conditioner	2
mouthguard	2
hair brush	1
shampoo	1
deodorant	1
face mask tube	1
tissues	1
pill container	1
medicine cabinet	1
perfume container	1
retainer	1

Second, the teenage years tend to be a time when children become quite developmentally self-conscious and focus a lot of attention upon their body image, and this may have been of some meaningful importance to the two teenage members of the household – particularly Emma; this might be suggested by the fact that of the 47 reported instances, the affected objects belonged to Emma in about a quarter of them (12, or 25.5%).

“Junk Food” Items: There were 41 instances in which the affected object was some type of food or drink item. Table 7 gives a breakdown of these instances.

Table 7
Food/Drink Items Disturbed in the Silicon Valley Case

Object	# Times Moved/Affected
chocolate/candy/chewing gum	11
water	7
bread	2

donuts	2
salt	2
butter/margarine	2
food coloring	2
ice cream	2
cake	1
cookies	1
cereal	1
cheese	1
egg	1
chicken nuggets	1
vinegar	1
lemonade	1
grape juice	1
seltzer	1
cottage cheese	1

Of these instances, nearly half (20, or 48.9%) involved items that may be popularly perceived as “junk food,” in that they contained a high amount of fat or sugar. This seems to have been of particular concern to Emma, who was quite self-conscious about her weight and was frequently asking her family’s thoughts about it. In one particular instance, Emma reported experiencing a painful tactile sensation (a “scratch”) while she was eating a bowl of ice cream. Just prior to that, she had looked at the nutrition label printed on the container and commented about it being quite unhealthy (due to its relatively high amount of fat). This tendency for “junk food” items to be affected could be symbolically reflective of Emma’s subconscious concern over her weight and body image.

“Alarming” Family Situation: There were 40 instances in which the affected object was a cellular phone belonging to one of the family members. A potential symbolic aspect may be reflected in the numerous instances when the phones spontaneously and repeatedly dialed 911 that people in the United States dial for help whenever they find themselves in the midst of a crisis situation. Perhaps in this context, these spontaneous 911 dialings might be seen as an “alarm” symbol reflecting a subconscious or unconscious cry for help on the part of the family, even if they were done manually.

Discussion

Limitations

Due to the social restrictions imposed by the COVID-19 pandemic, we faced the unusual limitation of being prevented from making direct, on-site observations of the reported disturbances while they were still actively occurring. Also, no other outside observers were able to witness the phenomena, including the five police officers who briefly visited the townhouse in response to the family's initial call for help on June 17, 2020. In addition, no disturbances occurred whenever Eileen's parents visited the townhome or when the family sought refuge at her parents' home. This poses a serious limit on the degree of certainty and genuineness of the phenomena.

The testimony given by each of the family members regarding the *facts* of the disturbances were reasonably consistent, despite some variation in individual responses to those facts. As Hufford (1982) pointed out in his analysis of "old hag" stories in Newfoundland, such similarity suggests perceptual clarity which was cognitively processed appropriately by normal, healthy minds. As for concocting the events in the current case, the family was not seeking to publicize the case in any way, but behaved convincingly to seek the opposite. A number of the reported AE involved simultaneous observation by two, three, or by all four of the family members, which reduces the likelihood that all 295 events could be explained by one or both teens playing games. Some events in this case appear to be ideal examples of what Stokes (2017a, 2017b) calls *unequivocal spontaneous psi (USP)*, because the only non-psi hypothesis which might logically explain them is the trivial one – namely, that the reporter was flat out lying. Throughout the 7.5-month temporal window of the case, there were no incidents clearly suggestive of legerdemain or fraud. Moreover, the parents readily accepted our suggestion of family counseling for addressing the stress and anxiety due to the AE; and they did this at their own expense of time and money (including the "homework" assigned by B.H.). They also stayed the course throughout all 18 telehealth sessions, spanning half a year, until the disturbances ceased. This set of facts is difficult to explain under any hypothesis other than that the AE actually occurred, were accurately perceived, and appropriately dealt with by a normal, cognitively-healthy family.

The various features and characteristics found in the current case show patterns similar to other RSPK-type cases reported in the literature of parapsychological and psychical research, such as: no serious bodily injuries; a specifically targeted family group and location (family home); and thematically-related object focusing.

While no single spontaneous anomalous event can, in principle, be proven to be "unexplainable" (Solfvin, 2016), it is not unreasonable to leave the issue of etiology as an open one. One of the primary purposes of the present investigation was to assist the family in dealing with the anomalous disturbances. We were able to accomplish this, *regardless of the ultimate etiology of the AE*, and it is not our aim here to offer any definite claim or stance regarding the latter question.

Another limitation of the present investigation has to do with why the disturbances ceased. Although the clinical evaluations did reveal a number of psychosocial issues and stressors affecting the family over the period that the disturbances were active, it is not clear which of these (if any) might have been

crucial factors in the apparent cessation of the phenomena. The 7.5-month duration of the phenomena also exceeded the median and mean durations of 2 and 5.1 months, respectively, found across the sample of 116 cases surveyed by Roll (1977), and so it is also possible that the phenomena had simply run their course. Lacking any additional data which might further provide some clarifying insight, it is not possible to reach any definitive answer to this question and it remains open to various possible interpretations.

Practical Implications

The virtual investigative approach that was developed and applied in this case does seem to offer some practical implications which may be of use in future field investigations and applications of clinical parapsychology:

- The use of interactive online interviews and telehealth sessions in this case appears to offer a successful means by which investigators and clinicians may virtually assess, diagnose, and address not only mental health concerns, but also distressing psi-related disturbances. This may be particularly useful for working with these kinds of situations in cases where the experients are located in remote areas, or are facing other preventive barriers to direct home visits (such as medical or social quarantine).
- The psychotherapeutic techniques actively employed by B.H. in this case appeared to have some effective role in reducing and eventually eliminating the disturbing anomalous phenomena (as suggested by the close correlation between the onset of the telehealth sessions and the marked decrease in phenomena observable in Figure 1), perhaps through improving relations amongst the family members, as well as identifying and reducing the various stressors that they were facing during the “shelter-in-place” lockdown period. As Eileen indicated on behalf of the family, B.H.’s therapeutic approach “...taught us many useful and valuable tools for listening to each other, probing to understand more deeply, and finding the underlying feelings. We also learned to validate each other’s feelings so everyone feels understood” (e-mail communication to B.H., 3/1/2021). In addition (and in line with the premises of systemic family therapy), improvements in self-awareness and communication styles were noted among the family as therapy progressed. For example, the parents were encouraged to model good communication skills for the children by offering each other positive feedback (in the form of compliments), as well as honest communication about deeper needs and feelings when sharing gripes. Emma seemed to initially resist this change in the system (e.g., by telling her parents “B.H. told you to do that”), but then later, Emma was said to have spontaneously initiated the act of inviting the family to “share praises” with one another while they were sitting together at dinner on the evening of October 28, 2020. Similar techniques and approaches along these lines should be considered and explored by other clinical parapsychologists in the future.
- The team-oriented approach used in this case, involving a cooperative virtual interaction between field investigators and clinicians, demonstrates a means for investigators and clinicians, who may be distributed widely across a range of geographic locations, to actively collaborate with the aim of investigating and achieving resolution in a particular spontaneous case.

Relevance to AECKO

As discussed in Appendix A, AECKO is the acronym for the operational definition of a special type

of case which may facilitate the scientific study of anomalous phenomena. The AECKO concept is a work in progress, being far from fully developed. The goal in applying this concept to the case was to initially assess the following questions:

Is this an AECKO case? How is that determined? Our preliminary data on the current case identified a family group of four (a wife/mother, a husband/father, and two teenage children) as the witnesses and “victims” of a burst of multiple, apparently related, unexplainable events. This meets the *Anomalous Occurrence (AO)* criteria of AECKO (see Appendix A). It was soon learned that the anomalous events met the *kinetic (K)* criterion. A distinct identifiable group of people witnessed, reported, and were targeted by the anomalous events in a specific location (family home) in a specific window of time (with a beginning and foreseeable ending) fulfilled the *Communal (C)* criteria. Because this group is a family, it suggests this case is an *Episode (E)* of an as yet unknown narrative which connects the various events played out in this time-space window. The presence of teenagers or suspected “agents” is *not* necessary for identifying AECKO cases, though these observations are of great interest. The essential point of the AECKO framework is to minimize reductionist *a priori* assumptions and base identification of AECKO cases on the presence of pure phenomena.

How did the AECKO concept affect the investigation? What was added or altered? The AECKO designation had a subtle impact on the investigative approach. As usual, AO events are recorded and documented via audio/video clips, witness reports, sequelae of AO, and so forth. In addition, the AECKO concept suggests using a non-directive interview to reduce interviewer bias. The AECKO concept is based upon a theory-free, bias-free approach to collecting data – interviews should avoid, as much as possible, using specific questions (e.g., “Was there anyone who seemed to be a trigger or dampener of the phenomena?”).

Were the investigation outcomes affected by the AECKO concept? Yes, the AO is not seen as the key focus of the investigation. With a systems theoretic perspective, all observations within the boundaries of the case may impact any other observations. To focus too tightly upon one thing may divert the researcher from other potentially important observations. Secondly, in AECKO cases, it is taken for granted that progress towards understanding the AO is virtually impossible from the data of a single case. Progress comes from investigating many cases systematically and compiling them into a database which can be queried for establishing statistical boundaries, as well as for testing hypotheses, regarding the AO.

In addition, the AECKO perspective recognizes the importance of both the AO phenomena and the clinical psychological/psychotherapeutic insights. The history of spontaneous cases of the RSPK-type (of which AECKO is a subset) suggests that there may be a significant physical or mental health risk associated with AECKO cases due to the psychosocial stress and group structural collapse (e.g., Carrington & Fodor, 1951, p. 19; Roll, 2007; Williams, 2019). This necessitates two things: *informed consent*, assuring there is understanding and agreement regarding what the investigator(s) *will*, and *will not*, do during the investigation; and, *a licensed health professional* on the investigative team, to assure appropriate identification, triaging, or referral of persons as needed.

The AECKO concept strongly suggests that *all* members of the investigative team should have special training and/or experience with spontaneous cases of the poltergeist/RSPK-type. This includes any clinical consultants who assist on such a case.

Author Note

A preliminary version of this paper was presented as a panel session held at the 2021 Society for Scientific Exploration/Parapsychological Association “Connections” online meeting on July 30, 2021. We would like to express our sincere gratitude to Eileen (who diligently tracked and chronicled the disturbances in the written observational log) and the rest of the family at the center of this case for their kind cooperation and willingness to open their private family life to us. Without this, the present investigation would not have been possible. Parts of this field study relating to AECKO were supported by the BIAL Foundation under Grant 387/20.

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Appendix A: AECKO

The AECKO approach to spontaneous cases of the RSPK-type is driven by three observations:

First, Maher (2015) points out that the so-called poltergeist “...has been recorded since the first century” (p. 328, citing Irwin, 1999). Across the centuries and around the world there have been numerous well-documented and credible direct observations of clusters of macro-scale AE investigated and published in reputable journals and books (e.g., Barrett, 1911; Bender, 1974; Carrington & Fodor, 1951; Carvalho, 1992; Cox, 1961; Gauld & Cornell, 1979; Huesmann & Schriever, 1989, 2022; Owen, 1964; Roll, 1977, 2007). Such reports continue to this day, and constitute a bona fide scientific mystery, not only for parapsychology, but also for the physical sciences, the life sciences, the medical sciences, the neurosciences, psychology and the social sciences. These reports are potentially important and deserve to be taken seriously and rigorously investigated, for there may be a “hidden jewel” for science in these cases.

Second, much has been learned by investigators over the centuries. The similarities, patterns, and consistencies in these reports strongly suggest a foothold for science. However, the bits and pieces have failed to create a complete picture. One wonders if this is because we have not yet taken the long, patient process of laying a foundation for a systematic science. For example, we have no operational definitions or taxonomy for what we are studying. What we do have is Catherine Crowe’s (1848) 19th century observation that from among the great variety of reported anomalies, which were assigned folk labels (ghost, haunting, demon, etc.) without formal definitions, there was one type that stood apart from all the others as being readily identifiable, the so-called “poltergeist”-type. In the twentieth century, a rudimentary taxonomy began to emerge (Barrett, 1911; Carrington & Fodor, 1951; Gauld & Cornell, 1979; Roll, 1972/2004) to distinguish *place-centered* from *person-centered* phenomena (or haunted house vs. haunted person). The latter (person-centered) case type came to be most closely associated with the folk-term “poltergeist,” often personified as a mischievous spirit being. J. Gaither Pratt and William Roll (1958) significantly advanced the scientific study of person-centered cases with the introduction of a definition based upon the *phenomena* which distinguished it – namely, recurrent spontaneous psychokinesis, or RSPK. This definition moves away from folk spiritual beliefs toward human intervention, and towards operationalization. Roll was quite aware that further tweaking would be needed in the future.

Third, there may be a *subset* of cases which have properties that support and invite systematic scientific study. The foundation for this is the ability to clearly distinguish this subset, which calls for an operational definition. Although we cannot define something whose source is unknown, we can operationalize the *type of case* in which we are likely to find it. A review of historical cases of the RSPK-type, especially the cases detailed by Roll (1972/2004, 1977), augmented by the basic needs for a scientific investigation, suggests that the primary traits and characteristics of the *subset* we seek can be identified by the acronym A E C K O (pronounced “echo”), which stands for ***anomalous episodic communal kinetic occurrence***. The meaning of the acronym AECKO is as follows:

A & O: stands for *Anomalous Occurrence* – where:

1. *anomalous* is as used by Cardena, Lynn, & Krippner (2014, p. 4) for *anomalous experience* – an experience which does not fit into one’s usual understanding of the world; the term is
2. modified by *occurrence* to mean a group (two or more) of related AE clustered within a time/space

window with distinct boundaries;

K: for *Kinetic* – some of the AE are measurably energetic, including percussive sounds and physical effects (e.g., movement, apport, fire, water) that leave physical evidence of having occurred;

E: for *Episodic* – an episode, story, or narrative that connects the AO with the physical and psychosocial events in the time/space window, with a beginning, middle, and (foreseeable) ending;

C: for *Communal* – a distinct, identifiable group of people who are witnesses, victims, and reporters of the AO, and who are somehow related as a group.

AECKO is the acronym for an *operational definition* for a special type of spontaneous case of the RSPK-type. The AECKO approach is consistent with *systems theoretic thinking*. It outlines a *system* comprised of multiple physical and social events and interrelationships, which lends itself well to scientific investigation due to inter-case structural similarities and patterns, the presence of objectively measurable (kinetic) phenomena, and multiple witnesses. According to the Centers for Disease Control (CDC, 2022):

System theory focuses on understanding a system - as a whole - along with the underlying interactions of all the forces that make up that system, rather than dissecting a complex process and studying the individual parts...*the whole is more than the sum of its parts*, and a change in one part...may affect the other parts or the whole (emphasis in original).

When alerted to a call for help involving reports of AE, an investigator should resist the tendency to focus upon the anomalies in favor of uncovering and documenting a complex system – bounded in space and time – of physical and social events and interrelationships, all of which need patient documentation. The AECKO approach is designed to facilitate this re-orientation towards a systems perspective. AECKO is *not* a theory or definition of any individual part of the investigation. AECKO is an operational definition for the “case” as a whole, for the set of necessary and sufficient features which facilitates scientific investigation.

Appendix B

Methodologically, AECKO embraces a systems-theoretic perspective. That is, an AECKO case is considered a “system,” a collection of interrelated parts/factors which combine to produce some outcome of interest which is possibly greater than the sum of the constituent parts. In systems thinking, it is especially important that the investigation is unbiased, theory-free, and assumption-free, since any change or distortion in one part can affect any other parts, or the entire system.

In field studies (i.e., spontaneous cases) there are tacit, undefined, untested *assumptions* that investigators use as guidelines, similar to “lab lore” in experimental studies. The AECKO approach calls on investigators to be aware of and reconsider the subtle untested assumptions we often adopt in parapsychological case studies of the RSPK-type. Some examples of these assumptions (in italics) are:

Prolonging the active period of the AE is good for the investigation. Helping a family get rid of the dis-

turbances may conflict with the investigation of it. There are reasons to doubt this. From a purely practical viewpoint, there is no tested method for extending the duration of the AE. Also, there's no evidence that prolonging the duration of the AE improves scientific yield. It is likely that prolonged duration of AE may be associated with prolonged stress, anxiety, and confusion on the part of people who are affected. Given reasonable doubts about the benefits of this “investigator’s conflict” assumption, it would be hard to justify the potential increase in risks associated with it, even if they are small.

In systems thinking, the clinical dimension is perceived as being at least as important to the investigation as the AE itself. This is because whatever events occur, including psychosocial ones, might be co-contributors to the system from which the “disturbances” emerge. Since this is a reasonable possibility, delaying assistance to troubled persons can hardly be justified. Providing assistance to the troubled persons or family *first* – by appropriately licensed clinical professionals – may also yield key findings of relevance to the AE investigation.

Direct observation (of AE) by the investigator is much desired – it adds credibility to the case. While an investigator of RSPK-type reports may be comforted by direct eyewitness experience, it still is only an anecdotal account, and its scientific value is about the same as if it was made and reported by another credible (non-investigator) witness. An investigator’s eyewitness account may be *more* subject to bias due to vested interest (McClenon, 2018). The eyewitness account of a scientific investigator who is properly trained and familiar with the scientific literature regarding RSPK is most welcome, and may provide preliminary insights concerning use of controls, experiments, or theory-building ideas. However, the credibility of the case – and its ultimate explanation, depends upon a number of factors, of which investigators’ observations are a part.

Any person with a camera, recorder, and interview skills can conduct an AECKO investigation. The current case gives preliminary support that there exists a special type of spontaneous case of AE, distinguishable from other case types (e.g., hauntings, poltergeists, RSPK) – the current case has been identified (above) as a member of this “special” subset. AECKO cases often present as a combination of a basic case investigation (of the AE) and an express request for assistance from a family with potentially serious individual and family health implications. Triaging such a case demands far more than “a camera, recorder, and interview skills”. Special skills and knowledge are required. It is highly recommended that a team – perhaps multidisciplinary – be assembled to address the dual goals of an AECKO case. The field of parapsychology has devoted too little energy to the study and development of a clinical “arm”, sometimes known as clinical parapsychology. It is our hope that this current contribution will bring awareness and stimulation as to the need for this. There is much to do!

Systems thinking provides a different perspective. Alerted by a report of anomalous disturbances for which assistance is sought, an initial determination is made as to whether it fits AECKO criteria. AECKO is a special type of “case” centered on a burst of usually bizarre, complex, chaotic, and possibly self-organizing, anomalous phenomena. An AECKO case is operationally defined by inclusion of:

1. a burst or cluster of (2+) related anomalous phenomena (AO);
2. at least one measurable energetic (K) event;

3. an identifiable group of persons (C) providing a psychosocial backdrop, with:
 - a. person(s) reporting the AO;
 - b. person(s) witnessing the AO;
 - c. person(s) being targeted, victimized, or disrupted by the AO;
 - d. person(s) connected with a, b, & c, above, and with the AO disturbance;
4. an episodic narrative (E) or “story” that:
 - connects the AO and psychosocial backdrop (C-group);
 - is “played out” within a specific time-space window (including AO);
 - has beginning, middle, and (foreseeable) ending.

Systems thinking and systems theory involves “...a set of distinctive relationships among a group of components that interact with one another and their environment through the exchange of energy, matter, and/or information,” producing “...a new entity, the whole, that requires its own level of analysis” (Encyclopedia.com, 2019). Changing one component of a system may affect the entire system, or any other part of it, and we therefore hold no *a priori* bias about any one part of the system being of greater value or importance than any other.

There is no generally accepted theory or model that fully explains these cases. Investigators in an AECKO case should feel free to attend to whatever needs appear most urgent. Systems thinking, and common logic, suggest that carefully observing whatever “components” of the system present themselves most urgently – rather than attending stubbornly to preconceived notions – will have the greatest scientific yield. In the past, many investigators focused upon the etiology of the anomalous phenomena (AO), while the systems approach suggests that broadening the focus may better lead to discoveries about the AO. At the same time, it may lead us to discoveries about the clinical diagnostic and treatment issues in AECKO cases, which may turn out to be at least as important as the AO.

Una Investigación Virtualmente Accesible de Perturbaciones Anómalas Reportadas en una Casa Durante la Pandemia de COVID-19

Abstract: Se recibieron reportes de una familia de clase media en el área de Silicon Valley referentes a un estallido de experiencias anómalas (EA) que perturbó sus vidas mientras se encontraban en confinamiento a partir de la pandemia de COVID-19. Reportaron llamadas inexplicables al teléfono celular, movimiento de objetos, ruidos, sensaciones táctiles (empujones, rasguños), y la aparición de líquidos. También reportaron estrés extremo, ansiedad y confusión debido a la inexplicabilidad del fenómeno.

Las entrevistas preliminares indicaron que este reporte cumplía con los criterios para casos del tipo de ocurrencias cinéticas comunales episódicas anómalas (AECKO, por sus siglas en inglés; descritas en el Apéndice A) y acordamos lo siguiente: 1) investigar las EA; y, 2) apoyar a la familia. Para la investigación seguimos un enfoque virtual, y el estrés, ansiedad y confusión familiares se abordaron inicialmente por medio de información basada en evidencia de casos similares, la cual se proporcionó a la familia. Se le recomendó asesoramiento familiar y los padres completaron 18 sesiones vía Zoom que involucraron reducción de estrés, habilidades de comunicación familiar, entrenamiento en la intuición y educación básica acerca de los fenómenos anómalos.

Los hallazgos clave de este caso incluyen una disminución continua en las EA correlacionada con el avance en el asesoramiento, hasta llegar al cese total de estas. El análisis de 295 eventos individuales de EA registrados indica que las características de este caso son consistentes con otros que se han reportado en la literatura. Este caso resalta que: 1) la visita presencial del investigador puede no ser necesaria para llevar a cabo una investigación creíble y detallada de un caso del tipo RSPK; 2) la meta doble de investigar la etiología de las perturbaciones y apoyar a la familia son complementarias y no contradictorias; y 3) un enfoque con un equipo que incluya a un profesional de salud clínica certificado es altamente recomendable para este tipo de casos.

Palabras clave: experiencia anómala (EA), poltergeist, psicoquinesia recurrente espontánea (RSPK), investigación de campo, parapsicología clínica, Ocurrencias Cinéticas Comunes Episódicas Anómalas (AECKO, por sus siglas en inglés)

Une enquête sur des perturbations domestiques anormales durant la pandémie du COVID-19 facilitée virtuellement

Résumé : Des témoignages ont été transmis par une famille de classe moyenne de la Silicon Valley, en Californie, par rapport à une série d'expériences anormales (AE) qui ont perturbé leur vie alors qu'ils étaient en quarantaine chez eux pendant la pandémie COVID-19. Ils ont signalé des appels téléphoniques inexplicables, des mouvements d'objets, des bruits, des sensations tactiles (coups, brossages et « griffures » corporelles) et l'apparition de liquides. Ils ont également fait état d'un stress, d'une anxiété et d'une confusion extrêmes dus à l'inexplicabilité des phénomènes.

Les entretiens préliminaires ont indiqué que ces témoignages répondaient aux critères des cas de type AECKO (« manifestation cinétique commune, épisodique et anormale » ; décrit dans l'annexe A) et nous avons accepté : 1) d'enquêter sur l'AE ; et 2) d'aider la famille. L'enquête s'est déroulée selon une approche virtuelle, et le stress, l'anxiété et la confusion de la famille ont d'abord été pris en charge en fournissant des informations factuelles sur des cas similaires. Nous avons recommandé une consultation familiale et les parents ont suivi 18 séances de téléconsultation par Zoom axées sur la réduction du stress, les techniques de communication familiale, la formation à l'intuition et une base éducative quant aux phénomènes anormaux.

Les principaux résultats sont une diminution constante de l'AE en corrélation avec les progrès de la prise en charge, jusqu'à l'arrêt complet de l'AE. L'analyse de 295 événements d'AE enregistrés individuellement a montré que les caractéristiques de ce cas étaient cohérentes avec d'autres cas dans la littérature. Ce cas met en évidence que : 1) la visite personnelle d'un enquêteur n'est pas forcément nécessaire pour mener une enquête détaillée et crédible sur un cas de psychokinèse spontanée récurrente ; 2) il y a complémentarité et non opposition entre les objectifs d'enquêter sur l'origine des perturbations et d'aider la famille ; et 3) une approche en équipe, impliquant un clinicien professionnel, est fortement recommandée pour de tels cas.

Mots-clés : expérience anormale (AE), poltergeist, psychokinèse récurrente spontanée (RSPK), enquête de terrain, parapsychologie clinique, manifestation cinétique commune, épisodique et anormale (AECKO)

Eine virtuell unterstützte Untersuchung von während der Pandemie COVID-19 gemeldeten anomalen Störungen in einem Haushalt

Zusammenfassung: Eine Familie aus der Mittelschicht im Silicon Valley in Kalifornien berichtete über eine Reihe von anomalen Erfahrungen (AE), die ihr Leben störten, während sie während der COVID-19-Pandemie zu Hause in Quarantäne waren. Sie berichteten über unerklärliches Wahlverhalten von Handys, Objektbewegungen, Geräusche, taktile Empfindungen (Stiche, Berührungen und „Kratzer“ am Körper) und das Auftreten von Flüssigkeiten. Sie berichteten auch von extremem Stress, Angst und Verwirrung aufgrund der Unerklärlichkeit der Phänomene.

Vorgespräche ergaben, dass dieser Bericht die Kriterien für Fälle des Typs „anomalous episodic communal kinetic occurrence“ (AECKO) [anomales episodisches gemeinsam erlebtes kinetisches Vorkommnis] erfüllte (beschrieben in Anhang A), und wir stimmten zu, (1) den Vorfall zu untersuchen; und (2) die Familie zu unterstützen. Die Untersuchung wurde mit einem virtuellen Ansatz durchgeführt, und der Stress, die Angst und die Verwirrung der Familie wurden zunächst durch die Bereitstellung von evidenzbasierten Informationen über ähnliche Fälle angegangen. Wir empfahlen eine Familienberatung, und die Eltern nahmen an 18 Zoom-Telehealth-Sitzungen teil, in denen es um Stressabbau, familiäre Kommunikationsfähigkeiten, Intuitionstraining und grundlegende Aufklärung über anomale Phänomene ging.

Zu den wichtigsten Ergebnissen gehört ein stetiger Rückgang der AE, der mit dem Fortschreiten der Beratung korreliert bis hin zu dem Aufhören der AE. Die Analyse von 295 einzeln protokollierten AE-Ereignissen zeigte, dass die Merkmale dieses Falles mit anderen Fällen in der Literatur übereinstimmen. Dieser Fall zeigt, dass (1) der persönliche Besuch eines Untersuchers nicht unbedingt erforderlich ist, um eine detaillierte und glaubwürdige Untersuchung eines RSPK-Falles durchzuführen; dass (2) das doppelte Ziel, die Ätiologie der Störungen zu untersuchen und die Familie zu unterstützen, eher komplementär als widersprüchlich ist; und dass (3) ein Team-Ansatz, der eine zugelassene klinische Gesundheitsfachkraft einschließt, für diese Fälle sehr empfehlenswert ist.

Schlüsselbegriffe: außergewöhnliche Erfahrung (AE), Spuk, wiederkehrende spontane Psychokinese [recurrent spontaneous psychokinesis -- RSPK], Felduntersuchung, klinische Parapsychologie, anomales episodisches gemeinsam erlebtes kinetisches Vorkommnis [anomalous Episodic Communal Kinetic Occurrence (AECKO)]

Attitudes and Beliefs as Predictors of Psi Effects in a Pseudo-Gambling Task

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Abstract: Believers in psi (sheep) will use psi to hit a target, but as far as non-believers (goats) are concerned, the conventional understanding is that they will inadvertently use psi to avoid the target. In other words, goats do not tend to psi hit; they tend only to score at chance or occasionally psi miss, and since the sheep-goat effect is sufficiently demonstrated when sheep score significantly higher than goats, little thought is given to the fact that goats are never specifically asked to psi miss. The present study looks at the sheep-goat effect in the context of compliance (from sheep) and noncompliance (from goats). The psi task is five trials at guessing the Ace of Spades playing card while avoiding Ace of Clubs. We administered tests of paranormal belief, belief in luck, and attitudes towards gambling to determine correlates of psi performance. All the gambling attitude scales inter-correlated significantly as did most luck scales. For the whole sample (N = 120), effect sizes were at chance for spade-hitting and club-hitting as was the case for sheep and goats. Sheep and goats did not score differently from each other on either psi measure, and none of the scales correlated significantly with the two psi measures. The spade-hitting/ club-hitting correlation was negative and significant thus replicating the effect reported by Storm and Thalbourne (2005b). This correlation suggests that if participants successfully targeted Ace of Spades they tended to avoid Ace of Clubs (and vice versa), but more is implied—participants could still avoid noncompliance (if they were sheep) or compliance (if they were goats) by displacing to King cards. Also, belief in psi and luck, and attitudes toward gambling (whether positive or negative) do not appear to influence gambling success.

Keywords: compliance, gambling, psychic ability, sheep-goat effect.

Believers in psi (sheep) will use psi to hit a target, but as far as non-believers (goats) are concerned, the conventional understanding is that they will inadvertently use psi to avoid the target. In other words, goats do not tend to psi hit; they tend only to score at chance or occasionally psi miss, and since the sheep-goat effect is sufficiently demonstrated when sheep score significantly higher than goats, little thought is given to the fact that goats are never specifically asked (or given the suggestion to) psi miss.¹ The present study looked at the sheep-goat effect in the context of compliance from sheep and noncompliance from goats.

Since Storm and Thalbourne (2005b) considered compliance and noncompliance to be pivotal concepts related to gambling outcomes, instructions to participants in their forced-choice, card-guessing

¹ The terms “sheep” and “goat” apply to psi believers and psi skeptics respectively. A sheep-goat effect is evident if there is a significant scoring difference between sheep and goats (see Storm & Tressoldi, 2017). Sheep tend to score significantly above mean chance expectation (MCE) on psi tasks (they tend to psi hit), whereas goats tend to score at or below MCE (they tend to psi miss).

study were twofold: to target Ace of Spades cards and simultaneously to avoid Ace of Clubs cards. Storm and Thalbourne found the number of Aces of Spades was slightly above chance as hypothesized, thus suggesting participants were compliant with the experimenter's instructions. However, the number of Aces of Clubs was also slightly above chance, which suggested noncompliance. As Storm and Thalbourne did not measure the sheep-goat (paranormal belief) variable, they could not determine the source of compliance and noncompliance. Therefore, the present study (which is not just an attempted replication of the compliance/noncompliance effect) aims to look at the sheep-goat effect in the context of compliance (from sheep) and noncompliance (from goats). These effects are differentiated in a card-guessing experiment by a simultaneous two-task test that has two corresponding psi-outcomes of interest: spade-hitting (an "approach" task primarily for sheep) and club-hitting (an "avoidance" task primarily for goats).

In this study, we sought predictors of psi-hitting, psi-missing, and displacement using an on-screen,² forced-choice card identification experiment run on a computer. Paranormal beliefs, gambling attitudes, and beliefs about luck are investigated as predictors of psi outcomes. Paranormal belief is measured on the Australian Sheep-Goat Scale (ASGS; Thalbourne, 1995). Attitudes toward gambling are measured on the Gambling Attitude Scales (GAS; Kassinove, 1998), and Attitudes Toward Gambling Scale (ATGS-8; Canale, et al., 2016). Beliefs about luck are measured on the Belief in Good Luck Scale (BIGL; Darke & Freedman, 1997a, 1997b) and the Questionnaire of Beliefs about Luck (QBL; Luke et al., 2003).

Background to the Study

It is theorized that standard instructions in psi experiments elicit compliance in believers (sheep), which optimizes psi-hitting. However, it is assumed that the same instructions that ask sheep to comply are somehow appropriate for eliciting poor performances from goats in the form of chance-scoring or psi-missing when it is known that goats are more likely to engage in noncompliant behavior. Experimenters must provide options for goats (preferably built into the instructions) that goats can exploit to their ends. In this proposed study, noncompliance (usually practiced by skeptics or goats) is offered as an avenue of expression, not via the "approach" of a primary target (that is for sheep), but via the subtle offer to "avoid" a secondary target that may be "approached" by goats as an alternative target thus optimizing displacement or psi-missing. This approach/avoidance design suggests the "vindication" hypothesis—that is, psi-missing for goats disproves the psi hypothesis (Palmer, 1972; see also Schmeidler, 1960). However, the approach/avoidance design goes beyond cognitive dissonance by actually encouraging noncompliance. Unlike most psi experiments, the present study aims to produce a stronger sheep-goat effect.

Another issue here is that parapsychological experiments not only do not check or control noncompliance; they make little of it—experimenters assume that participants tend to comply with instructions. In saying that we can infer noncompliance from performances on a specific countertask (i.e., by deliberately targeting a decoy), we can logically assume that compliance and noncompliance must be *incompatible* (i.e., mutually opposed). Since Storm and Thalbourne (2005b) had already found evidence for this effect, the inverse relationship will be sought again in the present study.

² Thalbourne (2003) defines displacement as a form of ESP "shown by consistently obtaining information about a target at one or more remove, spatially or temporally, from the actual target designated for that trial" (p. 31).

There is some evidence that goats can be manipulated into changing their beliefs and attitudes towards psi and psi performance (see Lovitts, 1981; Storm & Thalbourne, 2005a). One study investigated the goat effect specifically, but it only implied a shift from noncompliance to compliance (Storm & Thalbourne, 2005a). The objective was to ameliorate skepticism in some number of goats. Once they understood that statistical significance could indicate psi-missing, it could cause cognitive dissonance to such a degree that they would shift from psi-missing to chance-scoring or even inadvertent psi-hitting just to discharge the dissonance. The hypothesis was supported.

Storm and Thalbourne (2005b) further considered the problem of compliance and noncompliance. Instructions to participants were twofold: to target Ace of Spades cards, and simultaneously to avoid Ace of Clubs cards. The number of Aces of Spades was above chance as hypothesized, thus suggesting participants were compliant with the experimenter's instructions. However, the number of Aces of Clubs was also above chance, which suggested noncompliance. Originally, the authors aimed to demonstrate compliance in two ways (Ace of Spades targeting and Ace of Clubs avoidance), so they hypothesized that club-hitting should be below chance. From a theoretical perspective, the suggestion of a noncompliance effect was serendipitous because it implied that some participants may have complied completely with the instructions and produced a compliance effect (spade-hitting), probably mainly from sheep. At the same time, there may have also been noncompliance effects (club-hitting) coming mainly from goats. It must be noted that Storm and Thalbourne did not measure the sheep-goat (paranormal belief) variable to confirm these assumptions. A third study found a noncompliance effect in goats induced by a reactance treatment through an opinionated communication that goats found more threatening than sheep (Storm et al., 2013). It demonstrated that goats' psi performance could be manipulated through a treatment rather than a specific psi task.

The proposed experiment has two important design features: (i) it creates a gambling scenario that encourages psi (nominally ESP), and (ii) it caters to participants' goal orientations, enabling sheep to comply and goats to do otherwise. Since research findings suggest that the motivations of sheep and goats tend to be antithetical (sheep tend to psi hit; goats tend to chance score, displace, or psi miss), it is proposed that sheep comply with the experimenter's instructions, whereas goats do not. In a "hand" of five cards, psi effects will be statistically determined by hit rates on a target card (i.e., the Ace of Spades) and a non-target card (i.e., the Ace of Clubs). The other three cards are decoys (Kings), which may provide an opportunity for displacement. The hypothesis is that paranormal beliefs, attitudes towards gambling, and beliefs about luck predict effects on psi performance outcomes in the pseudo-gambling task.

Paranormal Belief, Compliance, and Noncompliance

Schmeidler (1943) categorized participants as either those who believed in ESP ability in a given experimental condition (sheep) or those who rejected this possibility (goats). Reviews suggest that paranormal belief can predict psi-scoring differences between sheep and goats, with sheep scoring higher than goats (e.g., Palmer, 1977; Storm & Tressoldi, 2017). Evidence shows that goats can be manipulated into changing their psi performance. Lovitts (1981) formed two groups: (1) participants who were told subliminal perception explains ESP, and (2) participants who were told they were in an ESP experiment. Condition 1 was a masked ESP test. Responses were recorded on a sheet fixed to an envelope containing a target list. A significant interaction effect showed that goats had been manipulated to score like sheep and

vice versa. However, although Lovitts's design had a parapsychological aim, her findings only demonstrated that goats were compliant simply because they thought they were in a psychological experiment—i.e., goats were not seeking vindication to justify their skepticism about psi. Noncompliance, however, was demonstrated in Condition 2. Lawrence (1990-1991) failed to replicate Lovitts's effects probably because he left out one crucial component—the experimenter effect. Lovitts repeated to herself, “The targets are in the envelope” (p. 299), and she focused on achieving significant results (Lawrence did neither).

Storm and Thalbourne (2005a) hypothesized that goats could be converted from psi-missing to chance-scoring or better by informing goats that statistical results showing a significant effect imply psi (even psi-missing). The hypothesis was supported—goats shifted from chance-scoring to psi-hitting. Another study by Storm and Thalbourne (2005b) considered compliance and noncompliance issues. The number of Aces of Spades (approach target) was above chance, though not significantly, and thus only suggestive of the outcome expected if participants were compliant with the experimenter's instructions. However, the number of Aces of Clubs (avoidance target) was not below chance as hypothesized—Storm and Thalbourne (2005b) had hypothesized that there would only be compliance (i.e., Ace of Clubs avoidance). This hypothesis overlooked noncompliant responses from goats, but the study did not measure paranormal belief to determine the source of the effect (especially from goats). Other studies showed that a reactance treatment could induce noncompliance in goats (Storm, 2019; Storm & Rock, 2014; Storm et al., 2013), but the psi task was the same for sheep and goats, so sheep still had the compliance advantage.

Attitude Towards Gambling

Gambling scales may work well as predictors of paranormal ability in gambling situations since gambling outcomes may be influenced by psi (Don et al., 1998; Kugel, 1990-1991; Radin & Rebman, 1998). Gambling situations should present ideal occasions where heightened effects of psi are possible. Indeed, attitudes toward gambling might contribute to success or failure in gambling tasks—Thalbourne (2004) referred to such dispositions as “pro-attitudes” (conscious and unconscious orientations toward specific outcomes). In fact, Storm and Thalbourne (2005b) found that scores on the horseraces scale of the Gambling Attitude Scales (Kassinove, 1998) were significantly and negatively correlated with Ace of Clubs hitting, as hypothesized. They stated: “... the more negative the attitude is towards horse racing, the greater the tendency towards noncompliant psi targeting (i.e., in traditional terms, psi-missing)” (Storm & Thalbourne, p. 45). The suggested pro-attitude would be noncompliant targeting as a form of protest reflecting a conscious (or even unconscious) opposition to horseraces.

Few studies have tested participants in gambling situations to assess psi, so it remains to be seen whether “experimental gamblers” (participants set up in a laboratory-based gambling scenario) are predisposed towards gambling success (or failure) in accordance with their attitudes towards gambling.

Beliefs about Luck

Darke and Freedman (1997b) found that those who believed themselves lucky were confident and bet more money on a betting task. Those who believed themselves to be unlucky were timid and bet less money. Psi studies on luck are few and far between, and the early research is inconclusive (e.g., Greene, 1960; Rammohan & Krishna Rao, 1987). Wiseman, Harris, and Middleton (1994) found a significant pos-

itive correlation between perceived luckiness and paranormal performance for those participants who believed the paranormal task was dependent on non-chance factors (e.g., the perception that luck was involved). However, Smith et al. (1997) found only chance differences between “lucky” and “unlucky” participants on psi scores in a pseudo-RNG-based, coin-flipping task.

Watt and Nagtegaal (2000) found that “lucky” participants, determined from total scores on the Belief in Good Luck Scale (BIGL; Darke & Freedman, 1997a), did not do significantly better than “unlucky” participants in a lottery task. However, those who specifically believed their luck could affect their lottery success had significantly greater lottery success than those who did not. In a dice-throwing task, again using the BIGL scale, there was no significant relationship between BIGL scores and success.

Luke, Delanoy, and Sherwood (2008a) found the Luck subscale of the Questionnaire of Beliefs about Luck (QBL; Luke et al., 2008b) significantly correlated (and was a predictor of) precognition performance, but Luke et al. (2008b) did not replicate the result. However, they found two QBL subscales (Chance and Providence) correlated with psi outcomes. In a review of forced-choice precognition studies, Zdrenka and Wilson (2017) concluded that a “small but significant relationship” exists between “psi performance ... [and] luck belief (specifically, the belief that luck is primarily controllable)” (p. 23). More parapsychological research on paranormal beliefs, attitudes toward gambling, and beliefs about luck is needed.

Rationale and Outline of the Pseudo-Gambling Experiment

Most parapsychological studies have a single psi outcome as the dependent variable. However, two dependent variables—measured as two opposed outcomes—might serve as indicators of how psi functions for sheep, on the one hand, and for goats on the other. It is understood that sheep will use psi to hit a target, but as far as goats are concerned, the conventional understanding is that they will inadvertently use psi to avoid the target. In other words, goats do not tend to psi hit; they tend only to score at chance or occasionally psi miss, and since the sheep-goat effect is sufficiently demonstrated when goats score significantly lower than sheep, little thought is given to the fact that goats are never specifically asked to psi miss. Experimenters think such an option would run counter to the typical goat’s belief system (i.e., goats would prefer avoiding a target rather than prove any kind of psi, even psi-missing). Although psi-missing from goats demonstrates target avoidance, the effect is not optimized in standard psi tests.

For the proposed study, a simultaneous two-task design would sufficiently demonstrate a more balanced differential effect for sheep and goats. The advantage of the process-oriented parapsychology of the present study is that: (i) it caters to a participant’s goal orientation, whether the individual is a sheep or a goat, and (ii) noncompliance in goats can be tested at more than one level thus attaining evidence of sheep-goat effects in both degree and kind. Degree refers to a unidimensional effect along a continuum of psi-hitting, usually relating to paranormal belief. Kind refers to a sheep/psi (approach) response versus a goat/psi (avoidance) response, differentiated by a simultaneous two-task test that has two corresponding psi outcomes (i.e., spade-hitting for sheep and club-hitting for goats) as options that take into account the factors of compliance and noncompliance in sheep and goats, respectively.

Putting participants in a gambling situation may encourage psi because of the added incentive to

gain in the process if psi is focused on helping the participant win. Therefore, by measuring gambling outcomes, along with gambling attitudes, paranormal beliefs, and beliefs about luck as possible psi predictors, we may be better able to understand the psi process.

Participants were required to complete five scales (see Measures below). They then participated in a forced-choice, “pseudo-gambling”, card-identifying experiment, so-called because they were not required to make bets using their own money, although the decisions they made in the task were made as if they were gambling. They were instructed to use hunches, guesswork, their “sixth sense”, and any other “faculty” or mode of behavior or apprehension they considered helpful in making a correct card selection. They were informed that they would win or lose, according to those decisions.

In five trials, participants were expressly asked to identify the correct location of Aces of Spades (five in total), and they were also expressly asked to avoid Aces of Clubs (five in total). The other cards are Kings (three Kings of Diamonds cards on all trials). Participants were told that they would win “Instant Scratchies” tickets if they correctly identified Aces of Spades only (see *Procedure* below for details). There might be cognitive dissonance in some goats, but they would have to relinquish vindication (also a reward) for a possible cash reward. However, sheep are not in that situation, so they would still have the advantage over goats on spade-hitting. Furthermore, as regards club-hitting, staunch goats might use vindication as their incentive. The present study has two aims:

1. To gain insight into the sheep-goat effect manifesting in both degree and kind.
2. To discover correlates of psi effects using scores on the RASGS, BIGL, QBL, GAS, and ATGS-8.

Hypotheses

There are *confirmatory* and *exploratory* hypotheses. The *confirmatory* hypotheses are H1a, H2, and H4a (horsereces/club-hitting). All other hypotheses are *exploratory*. All hypotheses are directional, and all tests are one-tailed (unless specified otherwise). The level of significance is set at $\alpha = .05$. Data was not transformed, permutated, or bootstrapped. There can be no excluded (e.g., missing) data as the online pages do not permit continuation to another questionnaire page until all items are answered.

H1a. For the *whole sample*, the spade-hitting and club-hitting effects will replicate those found in Storm and Thalbourne (2005b, pp. 36, 42), which were both above chance (not significantly). The differences are not expected to range far from Effect Size (ES) = 0.008 for spade-hitting and ES = 0.028 for club-hitting (see Storm & Thalbourne, p. 42).

H1b. The number of correctly identified Aces of Spades (spade-hitting) is above chance *for sheep* (PMCE = 1.00), and the number of correctly identified Aces of Clubs (club-hitting) is above chance *for goats* (PMCE = 1.00).

H1c. A sheep-goat effect is expected for spade-hitting as performance differences (expressed as critical ratios, CR) both (i) *within the data of the present study* and (ii) *as replications of past findings* (reported in Storm & Tressoldi, 2017): “CR(z) = 0.40” (p. 89).

H2. There is a negative relationship between spade-hitting and club-hitting.

H3. Scores on the RASGS scale correlate (i) positively with spade-hitting and (ii) negatively with club-hitting.

H4. Scores on (i) the four GAS subscales (General, Lottery, Horseraces, Casino) and (ii) the ATGS-8 correlate positively with spade-hitting and negatively with club-hitting.

H5. Scores on the BIGL scale correlate positively with spade-hitting and negatively with club-hitting.

H6. Scores on three QBL measures (Luck, Providence, Fortune) correlate (i) positively with spade-hitting and (ii) negatively with club-hitting (NB: the two relationships are reversed in direction for the Chance measure; see Luke et al., 2008a, pp. 201-202).

H7. RASGS, BIGL, QBL subscales, GAS subscales, and ATGS-8 (+ Sex and Age) predict spade-hitting.

H8. RASGS, BIGL, QBL subscales, GAS subscales, and ATGS-8 (+ Sex and Age) predict club-hitting.

Method

Participants

A total of 120 participants were tested. No data was rejected. The sample comprised mainly University of Adelaide First-Year Psychology students invited to participate through the School of Psychology Research Participation System (RPS). Full details were provided in the RPS. First-Year Psychology students were given course credit upon completion of the study. Participation was also offered to other students and university staff using a Ballot Box and sign-up forms. The study was approved by the University of Adelaide School of Psychology Human Ethics Subcommittee (Approval Code Number 20/90).

Age details are: Sample = 120 participants; mean Age = 22 years ($SD = 6$ years); 38 males (mean Age = 22 years; $SD = 4$ years) and 82 females (mean Age = 22 years; $SD = 7$ years).

Measures

Four measures were used in the study:

- Rasch-scaled Australian Sheep-Goat Scale (RASGS; Thalbourne, 1995): An 18-item scale measuring belief and alleged experience of paranormal phenomena. Each item scores 0 (false), 1 (uncertain), or 2 (true). Raw range is 0 to 36; Raw Mean = 18. ASGS data are top-down purified (Rasch-scaled) to eliminate age and gender bias from the scale (Lange & Thalbourne, 2002). RASGS scores range from 8.13 to 43.39;
- Belief in Good Luck Scale (BIGL; Darke & Freedman, 1997a): a 12-item scale (scored on 5-point Likert scales; 1 = "strongly disagree" to 5 = "strongly agree") designed to measure the level of belief in the concept of good luck;
- Questionnaire of Beliefs about Luck (QBL; Luke, et al., 2008b): a 21-item questionnaire scored on 7-point Likert scales ("strongly disagree" to "strongly agree"). There are four polar concepts of 5 items each (Luck, Chance, Providence, and Fortune), and a one-item Perceived Personal Luckiness

measure (though Luke et al., p. 138 advise against its use);

- Gambling Attitude Scales (GAS; Kassinove, 1998): comprises four subscales measuring attitude towards gambling in “general”, “casino”, “horse-races”, and “lotteries” (9 items per subscale; Total: 36);
- Attitudes Towards Gambling Scale (ATGS-8; Canale et al., 2016): Comprises eight items that measure general attitude to gambling, not subject to “specific gambling activity” (p. 71). Scored using a Likert scale: 1 = “strongly disagree” to 5 = “strongly agree”. The sum of eight items forms a total ATGS-8 score (range 8–40).

Materials

Computer program containing Information and Consent pages (i.e., screens), plus separate pages for each of the measures listed above. Also presented are five trials of playing cards (face down).

Procedure

There are two stages to this study. Both stages were completed in a single afternoon session:

Stage 1 (Questionnaires): Via on-screen computer monitor, participants were required to complete the five measures (ASGS, BIGL, QBL, GAS, & ATGS-8).

Stage 2 (Gambling Task): On a computer monitor, five frames were presented one by one, each frame consisting of a row of five (5) playing cards (images drawn from a standard 52-card deck). Each row represents a “hand” of five concealed cards comprised of 1 × Ace of Spades, 1 × Ace of Clubs, and 3 × Kings—all face down; each row is a trial (five rows = five trials).

All cards appeared face down so that their values were not identifiable. Participants were required to complete the gambling task trial-by-trial. Participants were required to locate, in each trial, the Ace of Spades in the “hand” of five cards by using the mouse, placing the cursor over the card of choice, and left-clicking (for each trial, $P_{MCE} = .20$). An “Instant Scratchies” ticket (AUD\$1.00) of small cash value (but with high potential cash reward) was issued by the experimenter each time the participant found an Ace of Spades (each participant could have won up to five tickets). Targeting this card tests the hypothesis that significant overall success at the paranormal task of identifying Aces of Spades is evidence of a compliant attitude toward winning.

An Ace of Clubs was also concealed in each of the five hands (for each trial, $P_{MCE} = .20$). Participants were instructed not to target the Ace of Clubs. This card was necessary as a test of noncompliance. Should there be a significant number of hits on the Ace of Clubs, then evidence would exist that undermines the assumption of sufficient compliance by showing that noncompliance can exist during a psi task as well, which can lead to psi-missing. As a result, noncompliance in goats was optimized, possibly to the same degree that compliance was encouraged in sheep. Thus, this procedure was a more balanced test of the sheep-goat effect.

The participant was free to stop the task at any time and take any winnings accrued at the time of cessation of the task. The “pseudo-gambling” task only approximates the dynamism of real gambling be-

cause participants knew they were not making a personal investment in the task even though they were winning or losing. Additionally, the chance of winning might help focus concentration and arguably stimulate the psi function.

Randomization of card positioning and trial presentation was achieved through the random program in the computer code written by consultant Mark Brown. The experimenter (L.S.) had no knowledge of the outcomes because these were generated live during each trial. After each trial, the participant was given immediate feedback on the trial page; at the end of up to five trials (which also marked the end of the experiment), a total hit rate was given so that the participant would receive the correct number of “Scratchies”. Thus, feedback on trial outcomes is live; however, questionnaire feedback was given by e-mail to participants at a later date once questionnaires were scored. Email feedback consisted of questionnaire scores, an explanation of results, and a report of findings, all provided in accordance with Ethics Committee requirements. Both stages were completed in one session.

Data Analysis

Using SPSS (Version 27), data distributions were evaluated for normality. Descriptive analyses were conducted. Sheep-goat differences on the five measures were evaluated using a multivariate analysis of variance (MANOVA) test. Correlation matrices were prepared prior to assessing the viability of conducting multiple regression analyses (MRA) using (a) the five measures as independent variables (IVs), and spade-hitting as dependent variable (DV) in the first MRA, and (b) the same IVs in (a), and club-hitting as DV in the second MRA. It eventuated that conducting the MRAs would be redundant.

Power Analysis

It is expected that the hit rates (for Spade and Club counts) will be *just above* chance (whole sample), but probably non-significantly, where MCE = 20% ($k = 5$). Based on meta-analyses and reviews featuring forced-choice studies (Cardeña, 2018; Storm, 2006; Storm & Tressoldi, 2017), effect size ES (as $ES = z/\sqrt{n}$) has been reported to be as low as 0.01, but as high as 0.05. The original study (Storm & Thalbourne, 2005b) gave comparable ESs in that range: rounded up to 0.01 (for spade-hitting) and 0.03 (for club-hitting) with only 500 trials. A basic power analysis (G*Power) suggests that, for 600 trials, with effects in that range (0.01 and 0.05), power ($1 - \beta$) would only be 0.08 to 0.18, respectively. Ideally, power could reach roughly 0.80 if effects were expected in the region of 0.10 (a ten-fold increase) or the sample was raised to $N = 7000$. I, therefore, do not expect significant hit rates; however, I will follow Rosenthal’s (1986) assertion that replication is evident if a subsequent effect size is *not* significantly different from a prior effect size: “A replication is successful to the degree that the second study obtains an effect size similar to the effect size of the first study” (Rosenthal, 1986, p. 334).

Results

Preliminary Findings

Age correlated positively and significantly with education, $r(118) = .50, p < .001$ (two-tailed), indicating that older participants tended to have tertiary-level qualifications. Sex correlated positively and

significantly with RASGS scores, $r(118) = .32, p < .001$ (two-tailed), indicating that females (mean RASGS = 21.80, $SD = 6.72$) tended to score higher on paranormal belief than males (mean RASGS = 16.99, $SD = 6.57$), $t(118) = 3.68, p < .001$ (two-tailed). For the whole sample ($N = 120$), hit rates on Spades, Clubs, and Kings are given in Table 1. Based on p values, the hit rate was below chance for Spades, at chance for Clubs, and above chance for Kings.

Table 1
Card Hit Rates (Spades, Clubs, and Kings)

Card Type	Hits (MCE)	Observed %	z	p
Spades (Tests psi-hitting)	110 ($P_{MCE} = 20\%$)	18.3	-0.97	.858
Clubs (Tests psi-missing)	120 ($P_{MCE} = 20\%$)	20.0	0.00	.516
Kings (Tests Displacement)	370 ($P_{MCE} = 60\%$)	61.7	0.79	.215
Total	600	100.0		

Note: Sample ($N = 120$); Five trials per participant: $120 \times 5 = 600$ trials. The binomial test is one-tailed.

The median RASGS score (21.45) was used as the cut-off point to demarcate sheep from goats, with goats scoring below 21.45 ($n = 60$) and sheep scoring at or above 21.45 ($n = 60$). Statistics for the scales and subscales are given in Table 2, which also shows the results of a MANOVA to assess differences between sheep and goats. Rows in **bold** indicate significant differences. Five comparisons were significantly different (See the **Discussion** section below for comments.)

The RASGS correlated significantly with BIGL and three of the four QBL subscales (Luck, Chance, and Providence). All test were two-tailed:

- RASGS \times BIGL, $r(118) = .31, p = .001$;
- RASGS \times QBL-Luck, $r(118) = .31, p = .001$;
- RASGS \times QBL-Chance, $r(118) = -0.37, p < .001$;
- RASGS \times QBL-Providence, $r(118) = .43, p < .001$.

The RASGS did not correlate significantly with any of the four GAS subscales or the ATGS-8.

The BIGL correlated significantly with the four QBL subscales (Luck, Chance, Providence, and Fortune), the ATGS-8, and GAS-Lotteries. All test were two-tailed:

- BIGL \times QBL-Luck, $r(118) = .45, p < .001$;
- BIGL \times QBL-Chance, $r(118) = -0.32, p < .001$;

- BIGL × QBL-Providence, $r(118) = .38, p < .001$;
- BIGL × QBL-Fortune, $r(118) = .27, p = .002$;
- BIGL × ATGS-8, $r(118) = .22, p = .016$;
- BIGL × GAS-Lotteries, $r(118) = .18, p = .050$.

Most of the four QBL subscales correlated significantly (see Table 3).

Table 2

Descriptives and Differences: Five Questionnaires, Mean Scores and SDs (N = 120)

Variable	Full Sample (SD)	Sheep (SD)	Goats (SD)	F(1, 118)	p (2t)
1. RASGS	20.28 (7.01)	25.95 (3.45)	14.61 (4.68)	228.31	< .001
2. BIGL	32.43 (7.81)	34.30 (7.21)	30.83 (8.11)	5.22	.024
3a. QBL—Luck	21.26 (5.80)	22.58 (5.40)	19.93 (5.93)	6.55	.012
3b. QBL—Chance	26.31 (5.20)	24.83 (5.59)	27.78 (4.33)	10.44	.002
3c. QBL—Providence	15.81 (7.04)	18.23 (6.82)	13.38 (6.45)	16.03	< .001
3d. QBL—Fortune	18.02 (5.93)	17.80 (5.41)	18.25 (6.46)	0.17	.680
4a. GAS—General	26.93 (7.79)	26.40 (7.52)	27.45 (8.08)	0.54	.463
4b. GAS—Lotteries	31.28 (7.21)	32.55 (6.22)	30.02 (7.93)	3.79	.054
4c. GAS—Horse-Races	20.12 (8.55)	19.78 (8.46)	20.45 (8.69)	0.18	.671
4d. GAS—Casino	30.60 (8.29)	30.45 (7.39)	30.75 (9.16)	0.04	.844
5. ATGS-8	20.69 (4.69)	20.40 (4.65)	20.98 (4.76)	0.46	.498

Notes. RASGS = Rasch-Scaled Australian Sheep-Goat Scale; BIGL = Belief in Good Luck Scale; QBL = Questionnaire of Beliefs about Luck; GAS = Gambling Attitude Scales; ATGS-8 = Attitudes Towards Gambling Scale.

Table 3

Pearson's Correlations: Beliefs About Luck (QBL)

Variable	1	2	3
1. QBL—Luck	—		
2. QBL—Chance	-.29*	—	
3. QBL—Providence	.41**	.43**	—

4. QBL—Fortune .37** .04 .17

Notes. $df = 118$; * $p = .002$; ** $p < .001$.

All four GAS subscales correlated significantly with each other and the ATGS-8 (see Table 4).

Table 4
Pearson's Correlations: Attitudes Towards Gambling (GAS & ATGS-8)

Variable	1	2	3	4
1. GAS—General	—			
2. GAS—Lotteries	.47**	—		
3. GAS—Horse-Races	.49**	.23*	—	
4. GAS—Casino	.78**	.51**	.40**	—
5. ATGS-8	.64**	.54**	.42**	.66**

Notes. $df = 118$; * $p = .011$; ** $p < .001$; GAS = Gambling Attitude Scales; ATGS-8 = Attitudes Towards Gambling Scale.

Planned Analyses

H1a: For the *whole sample*, the spade-hitting and club-hitting effects will replicate those found in Storm and Thalbourne (2005b, pp. 36, 42). The differences are not expected to be different from $ES = 0.008$ (for spade-hitting) and $ES = 0.028$ (for club-hitting), which were calculated from the data collected by Storm and Thalbourne.

Participants as Unit of Analysis. The mean number of Aces of Spades was slightly below chance ($M_{\text{spades}} = 0.92$, $SD = .80$) and not significant, $t(119) = -1.15$, $p = .253$ (two-tailed). The mean number of Aces of Clubs was at chance ($M_{\text{clubs}} = 1.00$, $SD = .79$) and not significant, $t(119) = 0.00$, $p = 1.00$ (two-tailed).

Trials as Unit of Analysis. From Table 1, the count of Aces of Spades was below chance ($N_{\text{spades}} = 110$) and not significant, Exact Binomial $z = -0.97$, $p = .858$. The number of Aces of Clubs was at chance ($N_{\text{clubs}} = 120$) and not significant, Exact Binomial $z = 0.00$, $p = .516$.

When z scores were converted to ES values, the differences were not expected to be different from $ES = 0.008$ (for spade-hitting) and $ES = 0.028$ (for club-hitting), which were calculated from the sample data collected by Storm and Thalbourne (2005b). Table 5 lists the trial and hit counts for spade-hitting and club-hitting for the two studies. Respective ES s were compared using the VassarStats online calculator (Lowry, 2001-2021: <http://vassarstats.net/rdiff.html>). The program compares r values; Rosenthal (1986, p. 319) equates ES with r using the same formula used in many parapsychological meta-analyses (i.e., $ES = r$

$= z/\sqrt{n}$).

For the two studies, the Ace of Spades ES difference between .008 and -0.004 is not significant, $z = 0.20, p = .842$ (two-tailed). The Ace of Clubs ES difference between .028 and .000 is not significant, $z = 0.46, p = .646$ (two-tailed). Though effects are very much weaker in the present study, they can be taken as replications, for as Rosenthal (1986) notes: "A replication is successful to the degree that the second study obtains an effect size similar to the effect size of the first study" (p. 334).

Table 5

Trials, Hit-Rates, Trial-Based Z Scores, and ES Scores for Spade-Hitting and Club-Hitting

Study	Variable	Total Trials	Total Hits	Proportion	Z Score	ES
Study 1	Aces of Spades	500	102	.204	0.170	.008
	Aces of Clubs	500	106	.212	0.615	.028
Study 2	Aces of Spades	600	110	.183	-0.970	-.004
	Aces of Clubs	600	120	.200	0.000	.000

Notes. Study 1 = Storm and Thalbourne (2005b); Study 2 = Present Study.

H1b. Spade-hitting for sheep was not above chance ($MCE = 1.00$), $M_{spades} = 0.93$ ($SD = .73$), and not significant, $t(59) = -0.60, p = .551$ (two-tailed). Club-hitting for goats was not above chance, $M_{clubs} = 0.98$ ($SD = .79$), and not significant, $t(59) = -0.16, p = .871$ (two-tailed).

H1c: A *sheep-goat effect* is expected for spade-hitting as performance differences both (i) **within the data of the present study** and (ii) as **replications of past findings** (reported in Storm & Tressoldi, 2017, p. 89). For both (i) and (ii), the sheep-goat difference is expressed as a critical ratio (CR) given by Formula #10 in Palmer (1986, p. 154; also used by Lawrence, 1993, p. 76; and Storm & Tressoldi, p. 106) for change in scoring as hit totals of two groups of trials:

$$CR_d(z) = \frac{(H_1/n_1) - (H_2/n_2) \pm 0.5(1/n_1 + 1/n_2)}{\sqrt{[(pq/n_1) + (pq/n_2)]}}$$

where $CR(z)$ is the critical ratio of the difference as a z score, H_1 and H_2 are the total number of hits in each group, n_1 and n_2 are the corresponding numbers of trials, p = chance probability of a hit (the reciprocal of the number of target alternatives), q = chance probability of a miss (i.e., $1 - p$), and ± 0.5 means adjust towards zero. A significant $CR(z)$ indicates a sheep-goat effect.

For (i), scoring was in the direction expected: sheep (with 56 Spades) scored slightly higher than goats (54 Spades). However, $CR(z) = 0.11, p = .456$. The sheep-goat effect is not significant.

Out of interest, the club-hitting difference was checked. Scoring was not in the direction expected:

goats (with 59 Clubs) scored slightly lower than sheep (61 Clubs), though the difference was not significant, $CR(z) = 0.08, p = .468$. King-hitting was also checked: sheep scored 183 Kings, and goats scored 187 Kings; the difference was not significant, $CR(z) = 0.24, p = .404$.

For (ii), $CR(z)$ calculated in the present study is compared to the $CR(z)$ in the Storm and Tressoldi (2017) sub-sample of studies with actual sheep and goat trials. The past (earlier) value determined from this data is: " $CR(z) = 0.40$ " (p. 89). The two $CR(z)$ values can be tested against each other to determine replication using Rosenthal's (1986, p. 317) formula for a z-score difference $(z_1 - z_2)/\sqrt{2}$. The difference between the two z values, 0.40 and 0.11, is not significant, $z = .21, p = .417$. The second value from the present study can be taken as a replication of the first.

H2. The relationship between spade-hitting and club-hitting was negative and significant, $r(118) = -0.15, p = .05$. The hypothesis was supported. This effect replicates the Storm and Thalbourne (2005b, p. 36) finding ($r[98] = -0.23$). The difference between -0.15 and -0.23 is not significant, $z = .60, p = .275$ (one-tailed).

H3. Scores on the RASGS scale did not correlate positively with spade-hitting, $r(188) = -0.05, p = .564$ (two-tailed), and did not correlate negatively with club-hitting, $r(118) = -0.05, p = .568$ (two-tailed). The two-part hypothesis was not supported.

H4. (i) Of the four GAS measures—General, Lottery, Horse-races, Casino—three correlated positively with spade-hitting (listed in **bold**), but these were weak and not significant:

- **Spade-hitting × General, $r(118) = .0003, p = .499$;**
- **Spade-hitting × Lottery, $r(118) = .04, p = .335$;**
- Spade-hitting × Horse Races, $r(118) = -0.03, p = .790$ (two-tailed);
- **Spade-hitting × Casino, $r(118) = .02, p = .434$.**

Of the four GAS measures, three correlated negatively with club-hitting (listed in **bold**), but these were weak and not significant:

- Club-hitting × General, $r(118) = .003, p = .976$;
- **Club-hitting × Lottery, $r(118) = -0.01, p = .443$;**
- **Club-hitting × Horse Races, $r(118) = -0.05, p = .308$;**
- **Club-hitting × Casino, $r(118) = -0.03, p = .364$.**

H4. (ii) The correlation between spade-hitting and ATGS-8 was not positive, $r(118) = -0.06, p = .524$ (two-tailed). The correlation between club-hitting and ATGS-8 was not negative, $r(118) = .02, p = .824$ (two-tailed). Both correlations were weak, and neither was significant. The hypotheses were not supported.

H5. Scores on the BIGL scale did not correlate positively with spade-hitting, $r(118) = -0.05, p = .600$

(two-tailed), and did not correlate negatively with club-hitting, $r(118) = .000, p = 1.00$ (two-tailed). The hypothesis was not supported.

H6. (i) Of the four QBL measures—Luck, Providence, Fortune, and Chance—two out of four spade-hitting correlations were in the directions hypothesized (listed in **bold**), but none were significant:

- Spade-hitting \times Luck, **$r(118) = .07, p = .211$** ;
- Spade-hitting \times Providence, $r(118) = -0.02, p = .834$ (two-tailed);
- Spade-hitting \times Fortune, **$r(118) = .03, p = .362$** ;
- Spade-hitting \times Chance, $r(118) = .000, p = .360$.

H6. (ii) Of the four QBL measures—Luck, Providence, Fortune, and Chance—three out of four club-hitting correlations were in the directions hypothesized (listed in **bold**), but none were significant:

- Club-hitting \times Luck, **$r(118) = -0.06, p = .249$** ;
- Club-hitting \times Providence, $r(118) = .08, p = .374$ (two-tailed);
- Club-hitting \times Fortune, **$r(118) = -0.11, p = .117$** ;
- Club-hitting \times Chance, **$r(118) = -0.02, p = .429$** .

For H6, five out of eight correlations in total were in the directions hypothesized, but none were significant.

Discussion

Forced-choice (card-guessing) experiments are known to have weak effects (Cardeña, 2018); however, forced-choice designs are the logical option in experiments that test gambling scenarios because the range of target choices is limited and unequivocal (as in poker machines, blackjack, roulette). Since forced-choice effects are weak, gamblers are clearly at a disadvantage if they wish to use psi (see Radin & Rebman, 1998). However, it is argued in this present study, as was argued by Storm and Thalbourne (2005b), that gambling performance (outcomes) may have a psi component, so it is reasonable to assume that beliefs about luck and psi (paranormal influence), and attitudes towards gambling, may play a role in gambling outcomes. In particular, sheep-goat effects may be evident in gambling performance. Thus, several relevant measures were used in the present study (see *Measures* above).

Of these measures specifically (not pertaining to psi effects), there were five significant mean differences between sheep and goats out of 11 tests (see Table 1), with four of the five in the directions expected. That is, sheep scored higher than goats on RASGS, BIGL, and two QBL subscales (Luck and Providence). Goats were significantly higher on QBL-Chance, which is understandable as they would be expected to think quite strongly that psi outcomes result from mere chance (no luck involved). One marginally significant difference was also in the direction expected (GAS-Lotteries). These differences may

have a bearing on the sheep-goat psi effect as goats (non-believers) could be repudiating the idea that luck and a positive attitude towards gambling can facilitate a successful psi effect (i.e., winning). However, the relevant correlations do not support this supposition (see results for H3 to H6).

As far as gambling attitudes go (as measured on GAS subscales), sheep and goats do not differ generally, and the same applies to ATGS-8 (also an attitude scale). That is, sheep and goats appear to agree. It is unclear whether some degree of sociocultural influence, manifesting as a matter of conscience (e.g., thoughts and concerns about problem gambling), might account for this parity in attitudes.

Some significant correlations were expected. RASGS correlated with BIGL, and three QBL subscales (Luck, Chance, and Providence). Believers (sheep) may consider that luck, chance, and providence can be controlled paranormally (i.e., with psi), whereas non-believers (goats) tend not to hold such beliefs. It is also unsurprising that the BIGL correlated with all four QBL subscales as these are all “luck” measures (and most QBL subscales correlate significantly with each other—see Table 3). These QBL intercorrelations generally replicate those in Luke et al. (2008b), which “range between .04 and .67” (p. 140).

Also to be expected, the gambling attitude scales (GAS and ATGS-8) all correlate significantly with each other (see Table 4). The GAS inter-correlations replicate the six significant correlations reported in Storm and Thalbourne (2005b, Table 2, p. 39). However, only the significant BIGL/GAS-Lotteries correlation above was replicated, whereas the BIGL correlated with all four GAS subscales in Storm and Thalbourne (Table 1, p. 39).

All three parts of H1 (a, b, c) are underpinned by a standard (compliance) protocol; participants were generally expected to *target* the Ace of Spades (expected effect = spade-hitting), with mostly sheep showing compliance, whereas the non-standard (noncompliance) protocol that runs concurrently (i.e., target avoidance) is expected to engage goats in a non-compliant attitude (expected effect = club-hitting). In H1a, for the whole sample (using participants’ scores as the unit of analysis), both types of effects were non-significant. Using trials as the unit of analysis, total hit counts for spades and clubs were at chance (see Table 1). ES values for spade-hitting and club-hitting were extremely weak; however, because of the non-significant differences with respective values reported in Storm and Thalbourne (2005b), these values could be interpreted as replications (see Table 5). Previously, since Storm and Thalbourne did not administer the ASGS, sheep and goat performances could not be tested; however, in the present study, there was no significant scoring for sheep on spade-hitting and no significant scoring for goats on club-hitting (see H1b). The test result for a sheep-goat effect (see H1c) shows that the performance difference between sheep and goats was non-significant, which contrasts with findings in the meta-analysis by Storm and Tressoldi (2017) that indicate sheep-goat effects.

The original spade-hitting/club-hitting correlation was negative and significant in the study by Storm and Thalbourne (2005b), $r = -0.23$ (see H2). This effect was replicated in the present study ($r = -0.15$), and although weaker, it was not significantly lower. The significant spade-hitting/club-hitting correlation suggests that (in a series of five trials) if participants tended to hit the Ace of Spades, they also tended to miss the Ace of Clubs (and *vice versa*). However, more is implied—if they fail in their aim, participants could still avoid *noncompliance* (if they were sheep) or avoid *compliance* (if they were goats) by displacing to King cards because not only do the two tasks (hitting Aces) have a degree of

independence of each other in the series, but also King targeting is an option. There is a slight suggestion of displacement towards Kings (at 61.7% where MCE = 60%; see Table 1). Even though the spade-hitting/club-hitting relationship is semi-independent, the r values do not show constancy, and there is much scope for other than negative outcomes. Thus, as Storm and Thalbourne have stated: "... this negative relationship is an important one. It indicates that there may be a negative relationship between compliant psi and noncompliant psi" (p. 44). However, there was no evidence from psi performances for sheep and goats that it was primarily sheep who demonstrated compliance or primarily goats who demonstrated noncompliance, but it would seem likely given their characters, which would appear to be driven (at least in part) by vindication in psi tests; "sheep and goats are ... motivated toward different ends" (see Palmer, 1972, p. 9).

The paranormal belief measure (RASGS) did not correlate significantly with the two psi measures, spade-hitting and club-hitting (H3). Nor were the correlations in the directions expected. However, six of eight GAS correlations (with the two psi measures) were in the directions hypothesized, but again none were significant (see H4). Neither were the two ATGS-8 correlations significant or in the directions hypothesized.

The remaining two hypotheses (H5 to H6), concerning the BIGL and QBL as possible spade-hitting and club-hitting correlates, comprised another ten correlations. Though none were significant, five out of six QBL correlations were in the directions hypothesized. Given the mostly non-significant psi outcomes, there was no need to run multiple regression analyses (H7 & H8).

In conclusion, a few factors need considering before firm statements can be made about the findings in the present study: First, given that a forced-choice study was conducted, it is fair to say the sample size may have been too small ($N = 120$, accounting for a total of 600 trials). In the sheep-goat forced-choice meta-analysis by Storm and Tressoldi (2017), the majority of studies had trial counts numbering in the thousands and tens of thousands. However, only a minority showed significant z scores (around 27%), and there are even fewer (15%) that produced significant psi effects requiring only hundreds of trials or fewer (see Storm and Tressoldi, Appendix A1, p. 103). Second, participants were primarily psychology students notorious for being poorer than other types of participants at producing psi effects. Third, as far as the measures are concerned, the QBL factors are not orthogonal (Luke et al., 2008b), and all the GAS subscales inter-correlate, as has been shown twice by this experimenter (see Table 4; see also Storm & Thalbourne, 2005b, Table 2, p. 39), so that variance is not necessarily *uniquely* explained, and in the case of this study especially, consistent failure to correlate significantly may be a pattern due to a lack of orthogonality in the subscales. At this stage, it looks like beliefs about luck do not appear to influence gambling success paranormally, though the review by Zdrenka and Wilson (2017) suggests otherwise. Attitudes towards gambling (whether positive or negative) seem to not affect psi outcomes either. These statements are based mostly on non-significant findings, but these, and the significant findings, will require future replication.

Acknowledgement

Research in this article was made possible by Grant #107/20 from the Bial Foundation in Portugal. The author thanks the Bial Foundation for their kind support.

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Actitudes y Creencias como Predictores de Efectos Psi en una Tarea de Pseudo-Juego

Abstract: Quienes creen en la existencia de psi (ovejas) lo usarán para acertar un objetivo, pero hasta donde concierne a los no creyentes (cabras), el entendimiento convencional es que ellos usarán psi de manera inadvertida para evitar el objetivo. En otras palabras, las cabras no tienden al acierto vía psi; únicamente tienden a acertar al azar u, ocasionalmente, a desacertar vía psi, y dado que el efecto oveja-cabra está lo suficientemente demostrado cuando las ovejas obtienen resultados significativamente mayores que los de las cabras, poco se ha reflexionado acerca del hecho de que a las cabras nunca se les pide específicamente que desacierten vía psi. Este estudio analiza el efecto oveja-cabra en el contexto de la obediencia (de las ovejas) y no obediencia (de las cabras). La tarea psi consistió en cinco intentos para adivinar la carta del As de Espadas mientras se evita el As de Tréboles. A los participantes les proporcionamos pruebas de creencia en lo paranormal, creencia en la suerte y actitudes hacia los juegos de azar para así determinar los correlatos del funcionamiento psi. Todas las escalas de actitud hacia los juegos de azar se intercorrelacionaron significativamente, al igual que la mayoría de las que tienen que ver con la creencia

en la suerte. Para la muestra completa (N = 120), los tamaños del efecto no difirieron de lo que se esperaba por azar, al igual que el caso para ovejas y cabras. Tanto las ovejas como las cabras no acertaron de manera estadísticamente diferente en cualquier medición de psi, y ninguna de las escalas se correlacionó significativamente con ambas mediciones de psi. La correlación acierto de espadas/acierto de tréboles fue negativa y significativa, replicando así el efecto reportado por Storm y Thalbourne (2005b). Esta correlación sugiere que, si los participantes le apuntaban exitosamente al As de Espadas, tendían a evitar el As de Tréboles (y viceversa), pero esto implica una tendencia adicional — los participantes aún podían evitar la desobediencia (si eran ovejas) o la obediencia (si eran cabras) desplazando a las cartas de Rey. Además, la creencia en psi y la suerte, así como la actitud hacia los juegos de azar (ya sea positiva o negativa) no parece influir en el éxito en este tipo de juegos.

Palabras clave: obediencia, juegos de azar, habilidad psíquica, efecto oveja-cabra

Attitudes et croyances en tant que prédicteurs d'effets psi dans une pseudo-tâche de jeu de hasard

Résumé : Les personnes qui croient au psi (les brebis) utiliseront le psi pour atteindre une cible, mais en ce qui concerne les non-croyants (les boucs), l'interprétation conventionnelle est qu'ils utiliseront le psi par inadvertance pour éviter la cible. En d'autres termes, les boucs n'ont pas tendance à obtenir un succès dans le sens du psi ; elles ont tendance à avoir des scores au niveau du hasard ou à rater occasionnellement la cible psi. Par ailleurs, comme l'effet brebis-bouc est suffisamment démontré, lorsque les brebis obtiennent des scores significativement plus élevés que les boucs, on ne se soucie guère du fait que les boucs ne sont jamais spécifiquement invités à rater la cible psi. La présente étude examine l'effet brebis-bouc dans le contexte de la conformité (des brebis) et de la non-conformité (des boucs). La tâche psi consiste en cinq essais pour deviner la carte à jouer « As de pique » tout en évitant l' « As de trèfle ». Nous avons fait passer des tests de croyance paranormale, de croyance en la chance et d'attitude envers les jeux de hasard afin de déterminer les corrélats de la performance psi. Toutes les échelles d'attitude à l'égard du jeu sont corrélées de manière significative, de même que la plupart des échelles de chance. Pour l'ensemble de l'échantillon (N = 120), les tailles d'effet correspondaient au hasard pour les succès en matière de pique et de trèfle, comme c'était le cas pour les brebis et les boucs. Les brebis et les boucs n'ont pas obtenu de résultats différents les uns des autres pour l'une ou l'autre des mesures parapsychologiques, et aucune des échelles n'a été corrélée de manière significative avec les deux mesures psi. La corrélation entre les réussites avec l'as de pique ou l'as de trèfle était négative et significative, reproduisant ainsi l'effet rapporté par Storm et Thalbourne (2005b). Cette corrélation suggère que si les participants réussissent à cibler l'as de pique, ils ont tendance à éviter l'as de trèfle (et vice versa), mais mieux encore : les participants peuvent toujours éviter la non-conformité (s'ils sont des brebis) ou la conformité (s'ils sont des boucs) en se déplaçant vers les cartes Roi. En outre, la croyance au psi et à la chance, ainsi que les attitudes à l'égard des jeux de hasard (qu'elles soient positives ou négatives) ne semblent pas influencer le succès à cette tâche.

Mots-clefs : conformité, jeux de hasard, faculté psi, effet brebis-bouc.

Einstellungen und Überzeugungen als Prädiktoren für Psi-Effekte in einer Pseudo-Glücksspielaufgabe

Zusammenfassung: Psi-Gläubige (sheep) werden Psi einsetzen, um eine Zielvorgabe zu erfüllen, doch bei Nicht-Gläubigen (goats) geht man davon aus, dass sie unbeabsichtigt Psi einsetzen, um das Erfüllen der Zielvorgabe zu vermeiden. Mit anderen Worten, Ziegen neigen nicht zu Psi-Treffern; sie tendieren zu zufälligen Psi-Treffern oder gelegentlichem Psi-Verfehlen, und nachdem der Sheep-Goat-Effekt hinreichend nachgewiesen ist, wenn „Schafe“ signifikant mehr Treffer erzielen als „Ziegen“, wird kaum darüber nachgedacht, dass „Ziegen“ nie ausdrücklich aufgefordert werden, Psi zu vermeiden. Die vorliegende Studie untersucht den Sheep-Goat-Effekt im Zusammenhang mit Compliance (bei „Schafen“) und Non-Compliance (bei „Ziegen“). Die Psi-Aufgabe besteht aus fünf Versuchen, die Spielkarte Pik-Ass zu ziehen, während das Kreuz-Ass vermieden werden soll. Wir haben Tests zu paranormalen Glaubensvorstellungen, zum Glauben an Glück und zur Einstellung zum Glücksspiel durchgeführt, um die Korrelate zur Psi-Leistung zu bestimmen. Alle Einstellungsskalen zum Glücksspiel korrelierten signifikant miteinander, ebenso wie die meisten Glücksskalen. Für die gesamte Stichprobe (N = 120) wie auch für „Schafe“ und „Ziegen“ waren die Effektgrößen für Pik-Treffer und Kreuz-Treffer zufällig. „Schafe“ und „Ziegen“ unterschieden sich in keinem der beiden Psi-Maße, und keine der Skalen korrelierte signifikant mit den beiden Psi-Maßen. Die Korrelation zwischen Pik-Treffern und Kreuz-Treffern war negativ und signifikant, was den von Storm und Thalbourne (2005b) berichteten Effekt repliziert. Diese Korrelation deutet darauf hin, dass die Teilnehmenden, wenn sie erfolgreich das Pik-Ass zogen, dazu neigten, das Kreuz-Ass zu vermeiden (und umgekehrt), aber es wird noch mehr impliziert: die Teilnehmenden konnten immer noch die Non-Compliance (wenn sie „Schafe“ waren) oder die Compliance (wenn sie „Ziegen“ waren) vermeiden, indem sie auf Königskarten auswichen. Auch der Glaube an Psi und an Glück sowie die Einstellung zum Glücksspiel (ob positiv oder negativ) scheinen keinen Einfluss auf den Erfolg beim Glücksspiel zu haben.

Schlüsselbegriffe: Compliance, Glücksspiel, übersinnliche Fähigkeit, Sheep-Goat-Effekt.

Book Review
The Science of Ghost Hunting

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GHOSTED! Exploring The Haunting Reality of Paranormal Encounters
by Brian Laythe, James Houran, Neil Dagnall, Keneth Drinkwater and Ciarán O’Keeffe, 2022. (Softcover).
\$34. ISBN (print) 978-1-4766-8577-9 ISBN (ebook \$17.99) 978-1-4766-4480-6

This book is the result of a five-year research program and it shows. Overall, *Ghosted!* is an excellent representation of what a scientific approach to ghost hunting looks like. The introduction makes it clear that “Our team takes these anomalous experiences seriously, but not necessarily at face value.” The book covers so much territory that I felt it best to describe it by chapter.

Chapter one begins with the results of a survey that the “Ghost Gang” conducted where they list a “Haunt Hierarchy” and divide experiences into objective and subjective noting that the differentiation can be blurred. By including controls where they had people imagine haunt-type experiences, they were able to note differences between how the two groups reported events which, in turn, allowed them to differentiate real spontaneous experiences from the rest. They list some examples such as “Mass Psychogenic Illness, “Imaginary Friends that Come Alive” and “Group (Gang)-Stalking.”

Chapter two logically progresses to examining the types of people who experience hauntings noting that transliminal, or “haunted” people, whose characteristics are outlined in the book, are the most likely to have a haunting experience. They discuss other psychological layers of ghost experiences in which a belief of some sort is the most common secondary factor. They also note that place and time can affect whether these experiences take place particularly if heightened emotions are involved.

In chapter three, having set the stage, they look at social factors that can bias people’s perceptions of these experiences noting that paranormal stories, either real or made up, can increase the number of reported hauntings while other social factors can have the opposite influence and create an environment of debunking. They explain that your ideological camp can dictate the nature of your experience.

In chapter four, the authors look at haunted settings which they explain are more likely to be the results of the experiences of haunted people than the locations themselves. Variables are discussed, such as “embedded cues” like a historical battlefield, which can cue people to have certain types of experiences. Also discussed are the effects of light levels, air quality, temperature, infrasound and EM fields. The discus-

sion then proceeds to highlight how people's personal memories, the atmosphere, and risk assessments can affect their experience.

Chapter five takes a deep dive into the psyche of the people who most commonly experience hauntings. The proneness is on a continuum and those people experience a wide range of haunting experiences which, the authors are careful to point out, occur to such a large portion of the general population that they can't be considered disorders. Threat detection, in which people are on guard for possible paranormal threats, such as a ghost appearing or objects moving, appears to also be related to people having haunting experiences. The authors make an important distinction between "mechanisms that produce strange perceptions" and "mechanisms that guide interpretations of those strange perceptions."

They provide three interesting examples: An experiment where participants used flashlights for signaling something paranormal in an isolated wildlife preserve; a scientifically controlled séance, and spirit cleaning rituals.

Chapter six looks at what we mean by "paranormal" by looking at several definitions, most of which come with too many assumptions, which the authors choose to simplify to: "anomalous" or "unexplained." There is a brief overview of what we know and don't know in science, and a quick mention of the observer effect in physics. This is a set up for when to label something as parapsychological using one of three classifications. Class 1 is unlikely to be regarded as paranormal. Class 2 is defined as "creepy but unprovable." Class 3 is defined as "likely to be anomalous." They take a look at some conventional explanations that fall flat in the face of evidence such as hallucinations, contagion effects, or hoaxes then discuss psi-based theories, which lean toward apparitions being telepathically induced. They also explain the "Stone Tape" theory which is that hauntings are energetic impressions that sensitive people pick up on. There is also a discussion on neurological causes for haunting experiences.

Chapter seven is an overview for citizen scientists. Readers are invited to explore what their expectations are for their own ghost hunting expeditions. Are they more interested in just having the experience or in contributing to science? They point out that science is "about valid measurement, reliable data, logical interpretations, and testable predictions." They describe what the usual fieldwork experience is like, saying that the location or interlopers are more dangerous to investigators than anything paranormal. Considerable effort is taken to convey the theory behind scientific investigations of hauntings, which includes a non-technical discussion of probability.

Chapter eight takes the citizen scientist through the meticulous process of investigating hauntings and apparitions and the layperson is encouraged to disregard any evidence that isn't recorded. Case documentation is thoroughly explored: Interviewing experiencers, history of the place, and documenting the specific target location properly as well as the recent history of the phenomena. The book then explains the exploratory inspections including the hotspot method, the importance of a layout plan, that the perimeter must be accounted for and it's best to have control locations. They talk about setting an investigator schedule and put special emphasis on timestamping and equipment placement. Once it is compiled, they discuss putting data in its proper context then submitting it for hypothesis testing which the authors feel is the realm of scientists.

Chapter nine invites citizen scientists to help gather evidence for various theoretical models and chapter ten has recommendations for ongoing education.

Before reading this book, I knew almost nothing about the science of ghost hunting and upon finishing, I felt like I had very firm grasp of what the field is, how a scientific investigation of hauntings is conducted, and what researchers are focused on. *Ghosted!* does an excellent job of giving the reader a very in depth understanding of this field of research.

Though the authors make a point of addressing the ghost hunting crowd in this book, my one criticism is that this, combined with the title and appearance, lends the impression that this book is written for a lay audience. As a non-scientist myself, I think that this book is written much more like a college level textbook both in writing style and content. It has a heavy emphasis on psychology, so a reader's basic understanding of the field beforehand would be helpful. A layperson, without that background, attempting to read this book casually may find themselves overwhelmed by this nuanced, complex, and information dense book.

Those who do invest the extra time and effort required will be richly rewarded. *Ghosted!* is a very valuable resource and is a must read for anyone involved in paranormal investigations.

Book Review
An Elusive Poltergeist Investigation

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The Elusive Force: A remarkable case of poltergeist activity and psychokinetic power
by Anna Ostrzycka and Mark Rymuszko (translated by Joel Stern), 2023. Anomalistic Books.
ISBN-13: 978-194950126. 174 pages. \$14.95.

In 1989, Anna Ostrzycka and Marek Rymuszko published *Nieuchwytna Siła* with Roj of Warsaw, Poland. This 102-page book included over 20 pages of supplemental photographs and images to support an extensive report of investigations of a potential poltergeist agent, Joanna Gajewska, that began in 1983 in Sosnowiec, Poland and continued through 1986 as the young girl and her family moved to different apartments in an attempt to escape the disturbing activity that seemed to follow them.

Joel Stern, having a background in translation from Polish to English, faithfully created an English version of this amazing story in 1989 with the plans for immediate publication. Those plans were delayed until 2023 when Anomalist Books recovered the translated text and published the translation as *The Elusive Force*. With a forward by Richard Broughton from 1991, this book presents a fantastic description of poltergeist phenomena that exceeds any individual investigation that has been described by parapsychologists in the past.

Joanna Gajewska, referred to as Joasia throughout the book, was a thirteen-year-old Polish school-girl in 1983 when she became ill with a very high fever. In April of that year, astounding paranormal events began to occur around the young girl, and her family sought help from a local physician and eventually the police department to assist them in understanding or eliminating the events which were growing in intensity and becoming dangerous for the girl and her family. The initial report reads more like science fiction than a scientific report.

At three o'clock in the morning while the girl was sleeping, "objects began flying through the air, mostly plates and glasses" (p.3), smashing into walls and furniture, leaving the room littered with dangerous debris. Lit matches were seen floating through the air and falling to the floor presenting a danger of fire in the room. Shards of glass and China rose from the floor and flew at the young girl producing cuts on her body, and the blanket covering her became electrically charged and would throw off sparks when anyone tried to remove it.

The family sought the assistance of their neighbor who later described the activity using calm and

measured language with the precision of a trained observer.

“...I returned there and saw glasses, plates, pots, and lots of other objects smashing into the wall. The noise was unbelievable.

Q. You saw objects flying?

A. Not flying, only when they hit the wall. Nobody was in the room; Mrs Gajewski and her daughter were standing with me in the doorway. Those dishes must've been flying incredibly fast, because you couldn't see them until they dropped.” (p. 4)

These phenomenal events caught the attention of the local media, and there was extensive journalistic coverage in many newspapers and other media outlets of the time. The authors, who were both journalists, describe the media coverage as sensationalist in tone, and they chose to report on the *real* story which would appropriately describe the activities and events.

In the beginning, most of the reports came from family members and other witnesses who discussed the incredible speed of the objects as they were propelled through the air, but some included reports of tea cups gliding through the air, full of liquid, leaving a trail of tea on the floor (p. 9). Faucets would unscrew by themselves, cords would wind themselves around electrical devices, and heavy furniture would spin in circles before toppling to the ground.

In May of 1983, Dr. Eustachiusz Gadula took an interest in the case and started an investigation into the activity and the health of the young girl. Dr. Gadula was the head of a medical facility, and he had an interest in paranormal events. With limited funding, he somehow was able to amass a team of experts in the field of metallurgy, radiology, medicine, and psychology to perform extensive investigations of Joasia. The reports from these professionals were not only astounding, but also amazingly consistent in tone, depth, and support for the unusual phenomena.

The research team continued to observe and report unbelievable events including objects passing through walls, the destruction of plumbing and other household objects, injuries to Joasia, and even medical instruments flying through the air producing a threat of harm to nurses and attendants during a medical procedure. When the team ran out of money in 1985, the investigation was reduced to limited visits with Dr. Gadula and continuing reports of activities from Joasia and her family members.

Despite nearly two years of detailed examinations and attention from top professionals in numerous fields, this book contains no references to published documents or articles. There are extensive interviews with named professionals including segments of transcripts from their interviews with the authors and other journalistic agencies. All of the people interviewed described incredible activity, most of which goes beyond activity that has been documented in the most active poltergeist cases described by parapsychologists. Although they observed events that would normally be considered impossible, the tone of each interview was strictly professional and each had a consistent level of detail that would normally be a sign of careful editing.

The activity reportedly continued until nearly 1990 when Joasia turned 20, changed her name, and began a life outside of the spotlight of the popular media. She had been invited to tour the world with Dr. Gadula to give lectures on the activity and describe the scientific investigation that had been completed, but she declined this offer in order to pursue a more private life.

This translation of the original book includes follow-up information through 2015 which includes a few paragraphs from an interview with Joasia in 1989 where she describes her acceptance of the activity as part of her life. The book has two appendices. The first appendix presents hypotheses and theories of poltergeist activity from academic experts, mostly in Poland. The theories discuss bio magnetic energies, small, localized Einstein-Rosen type black holes that appear spontaneously to allow object to slip through dimensional portals, quantum processes, gravitational waves, and examinations of cell potentials and brain activity. The final appendix is a discussion of PK with Dr. Gyorgy Egely, the inventor of the famous Egely wheel which has been used to observe potential PK effects in laboratory studies.

Evaluation

Poltergeist activity in the United States is normally described as a result of recurrent spontaneous psychokinesis (RSPK) originating with a poltergeist agent. Many modern poltergeist reports focus on identifying the agent of the activity and determining the origins of the events, but the main focus of modern poltergeist investigations is the elimination of activity to relieve the experiencers and their families of the anxiety and stress that accompanies these unexplainable events. It is a research philosophy that puts people first and addresses the needs of the experiencers before the ambitions of the researchers.

From a shower of stones which frightened the Roman army around 218 B.C. to a case reported in 1525 at a house of nuns, early reports included flying objects, noises, and touching by unseen entities (Gauld & Cornell, 1979). Continued investigations into the modern era describe objects that seem to move on their own and sometimes break or shatter (e.g., Pratt & Roll, 1958; Roll & Joines, 2013), and more recent explorations discuss electrical interference and malfunctioning devices (e.g., Morris, 1986; Kruth & Joines, 2016). These activities and events have been carefully observed, recorded, documented, and published in peer-reviewed journals by trained observers. There is no doubt that poltergeist activity occurs and many cases appear to be the result of a PK agent who is at the center of the activity.

The story of Joasia Gajewska began in 1983 and throughout six years of intense observation and examination, this story contains nearly every aspect of the poltergeist phenomena that have been observed in the published literature. It also provides speculation about the mechanisms for the poltergeist including the popular notion that these events occur with greater frequency in teenage girls as they approach puberty. Although each of the reported phenomena have been described in other cases (objects moving independently, water appearing spontaneously, loud noises, metal bending, furniture moving, injuries to the suspected agent), the extensive number and variety of events in this case are more reminiscent of a science fiction film from the 1970s than a professional scientific report.

Summaries and translations: There have been a number of English summaries of this investigation published since the original report in 1989, but nearly every one contains only a few sentences and has been produced as a result of a summary of the original publication. Two longer published reports by pro-

fessional researchers (Broughton, 1991; Bugaj, 1996) were produced from an unpublished version of this translation (Stern, J. personal communication) or from popular reports in the Polish media and interviews with the original author (Bugaj, 1996).

In a phone conversation in 2023, the translator, Joel Stern, confirmed that the translation was completed in 1989 but was not published at that time. The translation was true to the original language and tone, including a direct translation of all of the interviews and discussions with witnesses and investigators. There are times where an editor might modify the language of a translation or remove references to make the book more accessible to the intended audience, but Stern indicated that the text of the translation was true to the original Polish publication and that there were no references removed. An examination of the original publication in Polish shows no references and cites no articles that are not included in the translated edition.

Conclusions

The case of Joasia Gajewska is one of the most phenomenal reports of long-lasting poltergeist activity that has ever been published. Because the authors are journalists, their presentation of the activity is neatly described from its inception with a childhood illness in 1983, through the intense investigation of paranormal phenomena by leading researchers and scientists for nearly two years, to its conclusion in 1989 where Joasia comes to accept the activity as a normal part of life. It reads like a well-structured work of fiction that is peppered with transcripts from interviews with some of the leading scientist in Poland who all confirm and are mystified by the events that they observed.

A case of this magnitude should have been explored by researchers in great detail over the decades since it was reported, but it seems to have been bypassed by paranormal enthusiasts and professional scientists around the world. Though I do not speak Polish, my exchanges with Polish-speaking researchers and colleagues indicate that they found no professional publications produced by any of the scientist that were quoted in this book and that none of them have independently reported on events that they described as some of the most phenomenal and unexplainable activity that they have ever observed. If it were not for the popular media descriptions of these events, there would be no independent supporting documentation for the activity described in this book.

Unlike others who are quick to dismiss a book of this sort as an extremely creative fictional account that is sure to capture a popular audience with its journalistic writing style and extraordinary paranormal phenomena, my instincts do not allow me to completely dismiss that which is unknown or previously unobserved. A number of people have professed to have seen incredible events associated with Joasia, and if only a few of them are accurately described, they are worthy of further investigation.

Unfortunately, this book does not provide any supporting evidence for the incredible events. There are no publications referenced and there has been no independent investigation of the case which confirmed the descriptions included in this publication. As an academic work, this book would be rejected by nearly any professional peer-review process as a series of interesting stories that have not been professionally researched and reported.

It is possible to examine these events as a qualitative description of the experiences of Joasia and the people who surrounded her from 1983-1989, but in the context of other reported events, formal qualitative analyses would have to compare these reports with other poltergeist reports. I will leave it to others who might wish to perform a more formal analysis to determine if this case is appropriate to include in a study to learn more about the poltergeist phenomena.

The story of Joasia Gajewska is captivating and will engage the curiosity of many paranormal enthusiasts who are unfamiliar with poltergeist investigations. To a professional researcher of these phenomena, the story is mildly engaging and could be interpreted as a missed opportunity.

Any phenomena that is this extreme could have been captured on film even in the 1980s, and professional reports should have been completed in order to provide integrity to the story. Without the necessary components to produce a scientifically supported report, many people will interpret this story as nothing more than a work of fiction that will harm the work of professional poltergeist investigators due to the extreme exaggeration and narrative presentation that is more designed to entertain than to inform.

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Letter to the Editor

Experimenter Psi Considerations

The editorial, *Synthesizing Thoughts on Experimenter Psi*, by John G. Kruth in the *Journal of Parapsychology*, 86(2), has suggestions for how to minimize potential unwanted psi intrusions from experimenters and others involved in the psi experiments. Several recommendations for shielding and safeguards are provided along with a bracketing approach that considers environmental, psychological and cultural aspects. John cites two incidents from his Ganzfeld research where participants reported specific images not related to the target pictures that correlated exactly with his distractions during the Ganzfeld sessions. One was passive (thinking about an action), the other was active (performing a specific action). Unwanted intrusions from experimenter psi probably occur frequently but are not recognized or acknowledged.

Experimenter psi effects were observed during the Maimonides Dream Telepathy experiments in the 1960's – 1970's. This should be expected since the experimental protocol had a target picture observer (sender).

I have also observed similar effects during my informal replications of the Maimonides pioneering work and during my exploratory psi projects. In my experiments, the observers' distractions included imagery recall from a book, thinking about interesting features in the area, and personal issues. These psi intrusions can affect statistical results if similar elements are in the alternative targets. However, these unwanted psi intrusions can also assist in determining if the experiment was primarily telepathic, clairvoyant, or possibly precognitive. Experimenter psi influences observed during experiments with target observers provide evidence for potential experimenter psi effects in double blind protocols.

Individuals that may inadvertently influence the psi participants' data in double blind experiments include the experimenter, and possibly others who help administer the experiment. For operational or applied psi projects, a task monitor, a task provider, and interested observers may be present and can be a potential source for unwanted psi. I have observed instances where the strong bias or expectation of the monitor or task provider entered into the participants impressions and subconscious interpretations of the data.

These influences can be minimized by having a limited number of individuals directly involved with the experiment or task management. The tasking method may also have implicit biases that can be minimized by developing neutral targeting or objective designating procedures.

If the psi tasks are precognitive, other potential unwanted psi data effects may occur that may depend on the time between the psi sessions and when ground truth (feedback) is provided to the participants. Since the participants are in a "future seeing" mode during the psi sessions, interesting incidents encountered between the psi sessions and feedback may be perceived and incorporated into the pre-

cognitive data. Examples of unwanted precognitive intrusions: a tree climbing activity entered into the session data that was not in the target picture although it had a thematic association with the target's theme; a unique recollection by the person preparing the feedback email was presented clearly in the psi session data.

The precognitive targets may have an influence on the participants' spontaneous actions between the psi sessions and feedback time, with that action directly related to imagery in the target pictures. Recent examples are photographing a scene prior to feedback that matches the feedback picture; and creating an art form that correlates with a key image in the later seen feedback picture. These psi influenced actions are suggestive of synchronicity and that precognition and synchronicity are connected phenomenon.

Experimenters in formal psi experiments who focus exclusively on statistical evaluation would not recognize such psi intrusions since the data is not thoroughly reviewed with the participants. Data elements not related to the intended target are considered to be errors possibly from displacement to alternative targets, inaccurate perceptions or a psi process effect.

Sometimes these errors in psi session data have unique meaning not related to the target that can only be identified through dialogue when reviewing the data. Examples include a participant's sketch that had no correlation with the target but invoked concern since it suggested a serious emerging medical issue (it did); a sketch that seemed symbolic but not relevant to the target lead to resolution of a participant's personal concern. These errors are not the result of unwanted psi but arise from subconscious needs that have an opportunity to manifest during a psi session.

A focus method that I use to minimize or eliminate unwanted psi effects is to envision a tube (or tunnel) that connects directly with the target wherever it is, along with the intent that all noise or distractions cannot enter the tube and that only the target material can be perceived. A variety of noise reduction strategies are used by psi participants in experimental environments and by psi practitioners in applied projects that can also be adapted for minimizing experimenter psi influences. One possibility is for experimenters to visualize themselves being inside a "psi shield" that blocks unwanted psi access to their thoughts during the experimental period.

As John suggests, there are various methods used by the experimenters and others in the experimental environment to minimize the potential of an experimenter psi effect. Some error sources for psi session data may result from the psi participants being attracted to alternative targets and other interesting aspects of the experimental situation, including the experimenter's actions or distractions. The psi participants and the experimenters may have equal responsibility for psi data errors attributed to experimenter psi.

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Letter to the Editor

Expanding the Experimenter Role

Dear Editor,

The previous *Journal of Parapsychology*, 86(2), included an editorial about experimenter psi that made many important points, the most salient involving the need for researchers to examine their own beliefs and for each experiment to shield investigators from the data as much as possible. This is a very good start, but I would like to see the discussion broadened to include examination of who gets defined as playing a potential role in possible experimental effects, since everyone involved in an experiment could be a source of psi.

If motivation is the issue behind an investigator's effect, we are used to thinking of the primary investigator as having the most motivation, therefore the strongest effect. Yet many published articles show experiments designed by groups, with multiple names appearing as authors. Also, many experiments are replications; previous investigators might have strong desires to see their work replicated. In addition, a primary investigator might not be the person working with participants directly. In the editorial examples, the primary investigator was also the person interacting with participants, but that is not always the case. In many experiments, research assistants work with participants who might never even see the primary investigator.

The editorial mentions in passing that the behavior of mice can be affected by the sex of human investigators. In this case, perhaps we should also ask about the sex of the person cleaning the lab, preparing food, or building equipment for the mice. This expanded concept is analogous and applies to what can happen in experiments with humans, demonstrated by the following. Dr. Stanley Krippner wrote of medium and psychic Eileen Garrett successfully describing a photo in a sealed envelope. While doing so, she also provided accurate information about the young man who prepared the envelope and about Dr. Krippner as owner of the photo, which he later gave her as a present (Krippner, 2002). Psi connections were made beyond the boundaries of the experimental parameter.

Judges are another unexamined group affiliated with experiments but not listed as authors or investigators. Ganzfeld, remote viewing, and other experiments employ them to determine which images expressed by participants are closest to specific targets. Is it the judge's psi that chooses the correct target in an ambiguous forced choice situation? Or could a participant precognitively express imagery matching a judge's later determination rather than getting the information from the target itself?

If we take the experimenter effect seriously, we need to expand our definition of who is part of an experiment to include those who are not direct investigators. At the very least, we can ask everyone connected to examine their beliefs and can try to shield their possible influence. I agree with the previous

editorial that in doing so we will still never reach 100% certainty of eliminating the experimenter effect, but we can aim for this. It requires more work, but we can learn more about how psi functions -- and that's our goal, isn't it?

Reference

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Information for Authors

Purview of the Journal

The *Journal of Parapsychology* (founded in 1937 at Duke University, and indexed in Crossref, Ebsco, PsycInfo and Scopus) invites submissions relevant to parapsychology and related areas, including anomalous experiences, alterations of consciousness, and the nature of consciousness in general. All relevant disciplines, including psychology, physics, and biology, but also history, anthropology and other social sciences and the humanities are within the purview of the journal. Quality scholarly contributions, whether supporting the psi hypothesis or not, are welcome.

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2. Theoretical papers, discussing new theories or novel implications of theories presented previously.
3. Methodological and analytical papers, offering new or alternative ways of conducting research and/or analyzing data.
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5. Debates and letters about current issues in the field and papers recently published in the *JP*.

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of “isn’t”), e) include the appropriate diacritical marks in the case of foreign names and words.

Articles must not exceed 10,000 words, including references, unless previously authorized by the editor. They must include an abstract no longer than 200 words in a single paragraph, and up to 6 keywords. Do not include references in the abstract. Research studies must contain the following sections: Objective, Method, Results, and Conclusion. To facilitate the evaluation of research study conditions, the methods section must include, besides the usual information (e.g., participants, measures, procedure, analyses, ethical approval and related considerations such as consent form and what was conveyed to participants about the goals of the study), style of interaction with participants such as friendly, neutral, or peremptory; professional status, such as professor or head researcher, or research assistant), and researchers’ a-priori belief that the psi hypotheses in their study would be supported in their project using the following scale (5 -strong belief -, 4 -moderate belief-, 3 -neutral, 2 -moderate non-belief, 1 -strong non-belief). If authors have a reason to exclude any personal information, their submission should include a brief explanation for the exclusion. An institutional review board, when applicable, must have previously approved all research with human and other sentient beings, and research must be conducted according to generally accepted ethical guidelines. The manuscript must include information on funding and any potential conflict of interest.

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Statistical Analyses

1. Statistical values must be checked multiple times for accuracy.
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3. Following American Statistical Association Guidelines (Wasserstein, R. L. (2016). ASA statement on

statistical significance and p-values. *The American Statistician*, 70, 131-133. doi.org/10.1080/00031305.2016.1154108), authors are *strongly* discouraged from using p values dichotomically to assess the “significance” and importance of their results. Instead, they should use various numerical and graphical data summaries, interpret results in context independently of the p value, and provide complete reporting of analyses carried out and discuss the logical and quantitative import of their results.

4. The paper must clearly state which hypotheses (and analyses) were confirmatory and which exploratory. Meta-analyses are encouraged when multiple studies have basically used the same variables and a similar design.
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